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Nutrition in Blood Regeneration[1]

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THE extensive donation of blood by the general public since our entrance into the war has raised the question of whether or not information bearing on the nutritional requirements for blood regeneration should be distributed to blood donors. Specific dietary recommendations for blood donors have been prepared by a committee of the Diet Therapy Section of the American Dietetic Association and are discussed in the paper following this article. This paper presents certain nutritional and medical aspects of the problem of blood regeneration.

The nutritional factors essential for blood regeneration in man are less well understood than in certain experimental animals. Studies on the rate of blood regeneration following blood loss in man and the influence of certain dietary factors on this rate have been all too few in respect to the present importance of the problem. There are, however, studies available from which certain inferences can be drawn.

BLOOD REGENERATION IN MAN

Studies on blood regeneration by professional blood donors in this country during peacetime have shown that widely divergent periods are required for the return of the blood picture to normal. Fowler and Barer (1) found that in a group of 105 donors the blood hemoglobin values returned to normal on an average of 49.6 days following donations averaging 550 ml. Of this group, however, 27 required 9 weeks or more to return to normal. Jones, Widing, and Nelson (2) in a similar study found that when amounts of blood less than 400 ml. were taken, male donors could be used 4 or 5 times at intervals of 3 to 5 days without significant decrease in hemoglobin or symptomatic effects. If, however, more than 500 ml. were donated, the interval between donations should be lengthened. Giffin and Haines (3) in a study involving multiple donations of 500 ml. found that intervals of 4 or 5 weeks were sufficient for the return to normal. These recovery times, in general, would probably fit into the present blood donor program which calls for 500 ml. (or 1 pint) of blood every two months. However, the average recovery time, 49.6 days, as found by Fowler and Barer, looms somewhat too close to the two-month interval for comfort. The 26 per cent who required 9 weeks or more for recovery would find this program particularly unsatisfactory. In an attempt to shorten the recovery time these investigators gave 1.0 gm. ferric ammonium citrate daily to 89 of the donors in their study. The average recovery period was shortened to 35.2 days and the average daily hemoglobin gain was increased in the same group from 0.0518 gm. per cent per day (without iron) to 0.0772 gm. per cent per day. This striking response to iron is reminiscent of the findings of Snapper *et al.* (4) in which 27 out of 32 anemic Chinese blood donors were rapidly brought back to normal by iron therapy. In both studies, however, there was an appreciable group which did not respond satisfactorily to iron alone, particularly after 3 or 4 donations had been given. Whether or not these cases would have responded to improvements in dietary protein, copper therapy, or to other substances associated with blood regeneration is an interesting possibility.

Studies on phlebotomized dogs have given a totally different picture in regard to the rapidity of blood regeneration. Investigations at Wisconsin (5) have shown that animals severely hemorrhaged for many months will regenerate a normal blood stream within two weeks after cessation of phlebotomy. This was true on a highly purified sucrose-casein ration adequately supplemented with minerals and vitamins. The rise in blood hemoglobin in these dogs was 5 to 6 gm. per cent in two weeks. The human regeneration time, 49.6 days (Fowler and Barer), required to make only 2 to 3 gm. per cent hemoglobin after single donations, indicates either that there is a fundamental difference in the hematopoietic abilities of the dog and man or that the average blood donor does not receive a diet which will support optimum blood regeneration.

The fact that accelerated regeneration responses

[1] Received for publication, March 13, 1943. Reprints of this are available from the American Dietetic Association, 620 N. Michigan Ave., Chicago, at 15 cents each.

in donors have been obtained with iron therapy certainly favors the ingestion of iron-rich foods, and because some donors do not always respond to iron, suggests that other dietary factors may require special attention. Even if we were to assume that in normal times the average donor needs no special dietary attention, the rationing of foods incident to the war program may make necessary rather extensive revision of our point of view. Another factor to be considered is that only a small per cent of the total normal peacetime blood donations are usually drawn from women, whereas in the present wartime program this percentage has greatly increased. It is generally agreed that women are less capable blood regenerators than men and that successive bleedings are apt to result in anemia. The reasons for this are not entirely clear but may include periodic blood losses in menstruation, smaller bones and less bone marrow to regenerate blood, and poorer dietary habits, in particular less protein and iron-containing foods. Furthermore, women generally weigh less than men and hence they have a greater blood loss per unit body weight than men. Most blood donor centers take the same amount of blood from women and with the same frequency as from men. Under these conditions it may be expected that the average regeneration time in women will be appreciably longer.

Blood regeneration requires relatively large quantities of iron and protein. In the diets of many of us these factors are low without considering periodic blood losses. They become more critical with blood losses, and may be still more critical in the face of rising food prices and food rationing. The possibility of subnormal hematopoietic activity resulting from failure to ensure adequate intake of these factors threatens the general well-being and efficiency of the donor, and such a condition would certainly not be in harmony with our maximum war effort.

As has been stated, the nutritional factors essential for blood regeneration have not all been identified or established. It is known that iron, protein, copper, and the erythrocyte maturation factor are essential, but what other specific factors are involved can only be surmised. It is possible that, like the dog and pig, man also requires pyridoxine for this purpose; like the salmon he may require xanthopterin; or like sheep and cattle he may require cobalt. The importance of these latter substances in human nutrition is obscure at present; however, there are a few other nutritional factors which may affect blood formation in a nonspecific way. Among these may be listed vitamin D, the calcium-phosphorus ratio, and certain members of the vitamin B complex.

RELATION OF IRON TO BLOOD REGENERATION

As indicated by studies on blood donors, iron is probably the dietary essential most needed by the average donor. The removal of 500 ml. blood amounts to a removal of around 250 mg. iron. Even if one were to assume that dietary iron was 100 per cent absorbed and utilized (which is seldom the case), it is obvious that the 12 mg. per day dietary intake recommended as optimum for the normal adult by the Food and Nutrition Board of the National Research Council (6) would require 21 days to compensate for this one donation. Moreover, this does not allow for other bodily needs of iron. Somewhat less than the 12 mg. daily intake would be available for regeneration of the lost blood since hemoglobin formation seems to take place only when other bodily needs for iron are satisfied. It should be pointed out, however, that the recommendation of the Food and Nutrition Board is for the normal adult and not for blood donors. Lastly, carelessness in the selection of the diet and inadequate intestinal absorption would operate to increase further this minimum replacement period.

The difficulties that may be encountered in the absorption of iron are manifold and may account for considerable difference between total dietary iron and absorbed or available iron. Much of the dietary iron is "unavailable" because it exists in compounds from which it cannot be liberated by the digestive juices and efficiently assimilated. The failure of iron-deficient rats to utilize the iron of blood when given orally indicates that hemin iron is unavailable (7). The low availability of the iron in some meats may be attributed in part, at least, to the fact that some of the iron is hemin iron. The iron of ferric phytate is not wholly available (8) and probably foods contain many other compounds of iron which are poorly utilized by man. The "availability" of iron in many foodstuffs has been estimated by feeding experiments with iron-deficient rats and by the use of a chemical method for the determination of ionizable iron. In general there is good agreement between the results obtained with these two methods. Sherman, Elvehjem and Hart (7) and Shackleton and McCance (9) have reported the availability of iron in various foods. The available iron of meats varies from 15 to 94 per cent of total iron, vegetables from 20 to 100 per cent, fruits from 64 to 100 per cent, and legumes from 60 to 80 per cent.

Another factor which influences iron absorption is the calcium-phosphorus ratio of the diet. If the ratio is too low, the utilization of dietary iron is impaired (10). This effect conceivably operates through a removal of dietary iron as insoluble ferric phosphate. Utilization of iron is also lessened by excessive intakes of calcium (11). The mechanism of the high calcium effect is not clear but it is possible that the increased intestinal *p*H may reduce somewhat the solubility of the iron compounds in the intestine. Vitamin D has been shown to exert a favorable effect on the storage of iron in the tissues

as well as on the hemoglobin level of the blood of rats fed a synthetic ration having a calcium-phosphorus ratio of 1:4 (8). Why this should be true in complete absence of rickets is surprising and suggests a special role of this vitamin in iron metabolism. A similar conclusion was reached by Seyderhelm, Tammann and Baumann (12) in their studies on bile fistula dogs. The resulting anemia was prevented or cured with activated ergosterol. It has been observed that infants not receiving vitamin D absorb somewhat less iron than those receiving this vitamin (13). In the latter, however, a deficiency of vitamin D may well have existed and the effect of the vitamin might be explained on the basis of its effect on calcium and phosphorus metabolism. High-fat diets may impair iron absorption, particularly under conditions of insufficient bile secretion (14). It is also probable that the presence of phosphatides may be detrimental to iron absorption (15).

With simple inorganic salts of iron it is known that ferrous salts are more effectively absorbed than ferric salts. Moore and co-workers (16) found greater increases in serum iron with ferrous salts than with ferric salts, and suggested that only the ferrous salts are absorbed or that the ferric iron is precipitated so rapidly by the alkaline intestinal juices that it is available for absorption only for a much shorter period of time. When strong reducing agents were given with the ferric iron, or shortly before, the absorption of iron was comparable with the ferrous salts. Since most dietary iron is in the ferric form, conditions for reducing this iron should be optimum if the dietary iron is to be efficiently utilized. Whether or not such optimum conditions may always exist is not known, although it is possible that a part of the dietary iron may be lost because of incomplete reduction.

In terms of absorbable dietary iron, the iron removed by repeated blood donation may assume dangerous proportions unless attention is paid to iron-rich foods. The inclusion in the diet of such foods as liver, eggs, apricots, beans, molasses, and whole-grain cereals and bread will ensure better than average iron intakes and should be recommended to blood donors. Green vegetables, oysters, and meats are also high in iron but the iron present appears to be less available for absorption and utilization. Nevertheless, they too will make valuable contributions to the iron supply.

RELATION OF PROTEIN TO BLOOD REGENERATION

Protein is of equal importance in blood regeneration and in the usual diet of the blood donor is probably the next most needed nutritional essential. The removal of 500 ml. normal blood involves the loss of about 100 gm. protein. To replace this loss, dietary protein must be consumed well in excess of the amount required to maintain the other body tissues. Contrary to the case with iron, hemoglobin formation seems to take preference to other body requirements for protein and may be made at the expense of tissue protein, but this in turn establishes a deficit which must be replaced. Studies on the hemoglobin regenerating potency of various dietary proteins have been carried on in several laboratories. By use of a ration containing adequate iron and copper and in which various proteins were substituted as the sole source of dietary nitrogen, Pearson, *et al.* (17) demonstrated with anemic rats that when casein, liver, egg albumin, and soybean protein were used alone, excellent hemoglobin regeneration as well as growth was obtained. Blood, corn gluten, wheat gluten, gliadin, and gelatin were less effective in both hemoglobin production and growth. From these studies the conclusion may be drawn that biologically complete proteins are generally the best hemoglobin builders. The failure of milk supplements to increase hemoglobin regeneration in phlebotomized dogs receiving a salmon-bread ration (18) should be attributed to the well known deficiency of this ration in iron and not to an inferiority in milk protein. McKibbin and co-workers (5) found good hemoglobin regeneration in phlebotomized dogs fed a "synthetic" ration containing 18 per cent casein as the sole source of dietary protein.

The role of the individual amino acids in hemoglobin formation has been studied by Whipple and Robscheit-Robbins using dogs receiving a low-protein ration supplemented with adequate iron (19). Glycine, glutamic acid, aspartic acid, cystine, histidine, phenylalanine, and proline given in 1.0 gm. amounts daily gave about one-fourth the amount of hemoglobin production that would be effected by liver feeding. Alanine, valine, isoleucine, and arginine were less potent, as were leucine, methionine, lysine, tryptophane, and tyrosine, the latter group occupying an intermediate position. The conclusions that can be drawn from this type of experiment are somewhat limited, since the protein already present in the basal diet would be expected to influence the hemoglobin output following different nitrogen supplements depending on what amino acids are most needed and which ones are supplied by the supplement. At all events, no abnormally potent hemoglobin producing powers could be assigned to either tryptophane or tyrosine by this study. The importance of these two amino acids in the treatment of pernicious anemia has been emphasized by Jacobson and Subbarow (20) but conflicting results in anemia studies have been obtained by various investigators, using experimental animals (21). In general, one might conclude that much remains to be learned about specific amino acids and hemoglobin formation.

The role of dietary protein in the regeneration of serum proteins has been reviewed by Madden and

Whipple (22). In their laboratory, studies on plasma protein regeneration following plasmapheresis in adult dogs receiving a basal ration low in protein (1 gm. per kg. body weight per day) have shown that beef serum proteins were markedly superior to all other proteins. Salmon, yeast, and liver proteins were good, while casein, soybean, and beef heart were considerably lower in their serum protein regenerating potency. Whether or not these proteins would have followed the same order of potency had they been used as the sole source of dietary nitrogen instead of as supplements to a ration already containing protein, is a question which remains unanswered. Melnick, Cowgill, and Burack (23), using a similar technique with a protein-free diet, found that hypoproteinemic dogs could regenerate plasma protein at approximately equal efficiency when serum protein, casein, and lactalbumin were supplements to this ration. Admittedly, there were technical objections to the latter work as has been pointed out (22). For the present, it would appear safest for the blood donor to include in his diet proteins which are of high biologic value, such as those of milk, egg, liver, meat, and soybeans.

RELATION OF COPPER TO BLOOD REGENERATION

Copper is another essential nutrient for human blood regeneration. The role of this element in the treatment of anemias in man has been dealt with in reviews by Elvehjem (24), Schultze (25), and Hutchison (26). The loss of 500 ml. blood involves a loss of only 0.5 to 1.0 mg. of this element. It would thus appear that the replenishment of this factor would be less difficult than that of iron and protein. In addition, copper is quite widely distributed in nature and many studies on experimental animals have shown it to be required only in very small amounts. The occurrence of copper deficiency in adults has received little study, particularly the effect of this element in the treatment of anemias refractory to other therapy. No studies have been made on the effect of this element on regeneration times in blood donors. However, the fact that copper is required for hemoglobin formation makes its plentiful inclusion in the diet of the blood donor a matter of common sense. Foods rich in copper include liver, nuts, oysters, chocolate and cocoa, molasses, mushrooms, and whole-grain foods.

RELATION OF OTHER NUTRITIONAL FACTORS TO BLOOD REGENERATION

Several other nutritional factors may be related to blood regeneration so far as their deficiencies are characterized by mild anemias. Chronic experimental thiamin deficiency in man has been reported by Williams and co-workers (27) to be accompanied by a mild macrocytic hypochromic anemia, although this was not observed in acute thiamin deficiency. Sporadic mild anemias in beriberi might support the contention that thiamin has some specific function in hematopoiesis, but the probability of existing multiple deficiency in such cases detracts from the value of such evidence. The mildness of the anemia in man, and the failure to observe a comparable condition in thiamin-deficient experimental animals on an otherwise adequate diet, suggest rather that the anemia in man is nonspecific in nature and that it may appear as a part of a generally depressed function of all tissues incident to thiamin deficiency.

The relation of certain other members of the vitamin B complex to blood regeneration in man is suggested by extensive studies in experimental animals. The incidence of anemia in patients with various types of vitamin B complex deficiency has offered some opportunity for investigation of this problem. However, Moore and co-workers (28) were unable to demonstrate any increased hemoglobin response by the addition of yeast to the iron therapy. Regeneration rates with iron and yeast were comparable (0.163 gm. per cent per day) to the accepted rates for ferrous sulfate therapy. Again it is to be pointed out that these regeneration rates are far below those observed in experimental animals. Whether or not the cases cited can be taken as representative of all types of vitamin B complex deficiency that will be encountered cannot be stated. It is of interest that no high plasma iron values were observed in any of the patients with hypochromic anemia, a fact which might indicate no existing pyridoxine deficiency since high serum iron values are characteristic of this deficiency in dogs. The role of pyridoxine in erythropoiesis in man appears, therefore, a question yet unanswered.

The anemia frequently seen in scurvy might suggest a specific function for vitamin C in blood regeneration. However, the fact that this anemia generally responds to iron therapy alone is against this suggestion (29).

The requirement for the erythrocyte maturation factor deserves little consideration here since the possibility of such a deficiency in normal blood donors seems remote. It is believed that the macrocytic anemia of sprue and perhaps of pregnancy may arise from diets insufficient in the extrinsic factor. The inclusion of beef, other meats, and eggs in the diet should prevent any deficiency of this factor.

SUMMARY

In conclusion, it is evident that nutrition is of importance in blood regeneration and that good nutrition favors rapid regeneration. It would seem that foods rich in iron and protein in the diet of the average blood donor will generally ensure a more rapid return of the blood picture to normal. As a measure of safety the diet should also include liberal amounts of other essentials such as copper, as well

as those factors whose relation to blood regeneration in man has not been clearly established, namely, some of the vitamins of the B complex. In general, a diet fully meeting the requirements of the Food and Nutrition Board of the National Research Council, with increased emphasis on iron and protein foods, can be expected to provide optimum blood regeneration.

ACKNOWLEDGMENTS

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REFERENCES

(1) Fowler, W. M., and Barer, A. P.: J. A. M. A. 118: 421, 1942.
(2) Jones, H. W., Widing, H., and Nelson, L.: J. A. M. A. 96: 1297, 1931.
(3) Giffin, H. Z., and Haines, S. F.: J. A. M. A. 81: 532, 1923.
(4) Snapper, I., Liu, S. H., Chung, H. L., and Yu, T. F: Chinese Med. J. 56: 403, 1939.
(5) McKibbin, J. M., Schaefer, A. E., Elvehjem, C. A., and Hart, E. B.: J. Biol. Chem. 145: 107, 1942.
(6) National Research Council, Reprint and Circular Series, No. 115, January 1943.
(7) Sherman, W. C., Elvehjem, C. A., and Hart, E. B.: J. Biol. Chem. 107: 383, 1934.
(8) Fuhr, I. and Steenbock, H.: J. Biol. Chem. 147: 59, 1943.
(9) Shackleton, L., and McCance, R. A.: Biochem. J. 30: 582, 1936.
(10) Day, H. G., and Stein, H. J.: J. Nutrition 16: 525, 1938.
(11) Anderson, H. D., McDonough, K. B., and Elvehjem, C. A.: J. Lab. & Clin. Med. 25: 464, 1940.
(12) Seyderhelm, R., Tammann, H., and Baumann, W.: Zeit. ges. exper. Med. 66: 539, 1929.
(13) Josephs, H. W.: Bull. Johns Hopkins Hosp. 65: 145, 1939.
(14) Smith, P. W., and Crandall, L. A.: Am. J. Physiol. 135: 259, 1942.
(15) Tompsett, S. L.: Biochem. J. 34: 961, 1940.
(16) Moore, C. V., Arrowsmith, W. R., Welch, J., and Minnich, V.: J. Clin. Invest. 18: 553, 1939.
(17) Pearson, P. B., Elvehjem, C. A., and Hart, E. B.: J. Biol. Chem. 119: 749, 1937.
(18) Whipple, G. H., and Robscheit-Robbins, F. S.: Am. J. Physiol. 72: 418, 1925.
(19) Whipple, G. H., and Robscheit-Robbins, F. S.: J. Exper. Med. 71: 569, 1940.
(20) Jacobson, B. M., and Subbarow, Y.: J. A. M. A. 116: 367, 1941.
(21) Kotake, Y.: Ergebn. Physiol. 37: 245, 1935.
(22) Madden, S. C., and Whipple, G. H.: Physiol. Rev. 20: 194, 1940.
(23) Melnick, D., Cowgill, G. R., and Burack, E.: J. Exper. Med. 64: 897, 1936.
(24) Elvehjem, C. A.: Physiol. Rev. 15: 471, 1935.
(25) Schultze, M. O.: Physiol. Rev. 20: 37, 1940.
(26) Hutchison, J. H.: Quart. J. Med. (N.S.) 7: 397, 1938.
(27) Williams, R. D., Mason, H. C., Smith, B. F., and Wilder, R. M.: Arch. Int. Med. 69: 721, 1942.
(28) Moore, C. V., Minnich, V., Vilter, R. W., and Spies, T. D.: J. A. M. A. 121: 245, 1943.
(29) Lozner, E. L.: New England J. Med. 224: 265, 1941.

PROTEIN

The need of protein at all ages is now so well established that little argument need be advanced. . . . Note how the "essentialness" of the amino acids keeps step with the components of the B complex and B_1 . . . animal protein buffers the liver for blood plasma restoration . . . even as dextrose tides over the damaged liver. Philip Brown advises a high protein diet in ulcerative colitis in order to protect the liver. . . . Starvation edema is a matter of inadequate protein and liver efficiency. Space permitting, I could illustrate some of the follies of "arthritis," "colitis" and nondescript diets that decried the use of meat. A neglected and abused liver sets the individual toward a toppling over of his homeostasis. We may put down then, as our first duty to the aging: Teach them the importance of protein and how to get their quota, no matter how old they are, 1 gm. per kilogram of body weight. The pellagrin and the alcoholic addict with tremens prove how dependent the brain is on the liver. . . .

We may, if harder put, learn to appreciate soybeans. It is a matter of education. It is distinctly possible to be a well-fed vegetarian if milk, butter and eggs and cheese are plentiful and time is no object. Primitive peoples of our own times could teach us how the better to utilize the vitamin-rich viscera. The occasional azotemic patient and the gouty, at some stage in their imbalance, should have a low-protein intake; nearly every other indication, so much a part of books on diet, is a relic of a period in which attention was paid to the appearance and consistency of food and very little to its mineral, vitamin and chemical content.—*Tuohy, E. L.: Handbook of Nutrition: XX. Feeding the Aged, J. A. M. A., 121:42, 1943.*

Dietary Recommendations for Blood Donors

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The committee of the Diet Therapy Section of the American Dietetic Association which has been instrumental in preparing these dietary recommendations includes Margaret Cowden, Gladys E. Hall, Millie Kalsem, Frances MacKinnon, Nelda Ross. Reprints of this article are available from the Association at 15 cents each. The committee wishes to express appreciation to the following individuals for criticisms and suggestions for the proposed dietary recommendations: Drs. J. B. Alsever, C. A. Elvehjem, R. Leverton, H. S. Mitchell, H. T. Parsons, G. H. Whipple.

THE blood donor is asking for information regarding dietary measures which are designed to facilitate blood regeneration. It is obvious to him that nutrients have been removed from the blood. Would the proper food selection speed up the replenishment of these nutrients? This is of particular concern now that repeated donations are being asked for and given; it is of especial importance to women; it is of particular concern now that rationing of foods has begun. In connection with food rationing it has become a more precarious undertaking to select foods that will provide the optimum nutritional needs, and still conform to the point value allowances specified by the Office of Price Administration as well as the individual's budget allowance. Obviously, the blood donor will profit from and should be given specific dietary recommendations which will meet his needs.

The medical and nutritional aspects of the relationship of diet to hemoglobin regeneration have been well reviewed in the preceding paper by McKibben and Stare, and the nutritional principles outlined in that paper have been applied to specific food recommendations which may be followed by the blood donor.

PRINCIPLES OF FOOD SELECTION

In summing up the principles to be applied in selecting a diet for the blood donor, McKibben and Stare conclude:

> It is evident that nutrition is of importance in blood regeneration and that good nutrition favors rapid regeneration. It would seem that foods rich in iron and protein in the diet of the average blood donor will generally ensure a more rapid return of the blood picture to normal. As a measure of safety the diet should also include liberal amounts of other essentials such as copper, as well as those factors whose relation to blood regeneration in man has not been clearly established, namely, some of the vitamins of the B complex. In general, a diet fully meeting the requirements of the Food and Nutrition Board of the National Research Council, with increased emphasis on iron and protein foods, can be expected to provide optimum blood regeneration.

These principles have been applied in making up the accompanying pattern suggested for a daily menu plan. Even though the minimum amounts of the protective foods recommended in the menu plan are used by the blood donor, the diet will conform to the daily allowances recommended by the Food and Nutrition Board for calcium, iron, vitamin A, thiamin, ascorbic acid, riboflavin, and nicotinic acid. The protein, chiefly good quality proteins, and proteins that are rich sources of iron, will average 75 gm. daily. Suggestions for additional sources of iron-rich foods are also included.

PATTERN FOR DAILY MENU PLAN

MEAT, POULTRY, FISH OR SOYBEANS: Approximately 4 ounces daily (edible portion). Include liver or kidney in the diet two or more times per week. Lamb, beef, calf or pork liver may be used. Liver should be cooked only until it is no longer red. Beyond that point it becomes tough. Heart and tripe are also good blood builders.

Pork or ham once per week will augment the thiamin intake. Other meats, poultry, and fish may be used as desired. Oysters are of especial value.

Soybeans have been found to contain proteins of good quality and quantity. One-half cup cooked soybeans is equivalent to approximately 2 ounces edible meat.

Recipes for the use of soybeans may be obtained from the Bureau of Human Nutrition and Home Economics, U. S. Department of Agriculture, Washington,

D. C. and from the Department of Home Economics, University of Illinois Extension Service in Agriculture and Home Economics, Urbana.

EGGS: One or more daily. Eggs may be used alone or combined with other foods.

Soybeans may be used as a substitute for eggs in the following proportion: one-half cup cooked soybeans is equivalent to 2 eggs.

MILK: 1 pint or more daily. It may be used for cooking and for drinking. 1 ounce American cheese may be considered approximately equal to 1 glass milk (7 ounces) in calcium, phosphorus, iron and protein. However, the thiamin and riboflavin values will be considerably less in the cheese portion.

LEGUMES: Two or more servings per week of soybeans, dried peas, beans, lentils or peanut butter.

FRUITS: Two or more servings daily, of which one should be a large serving of citrus fruit or tomato, either fresh or canned. Apricots, peaches and prunes have been found to be effective blood builders and may be used as the second fruit.

VEGETABLES: Two or more servings daily, one of them leafy green or yellow. In addition, use one or more servings of either white or sweet potato daily.

In cooking vegetables, use a small amount of water where possible and cook for a short period of time. The water in which vegetables are cooked should be saved and used in soups, gravies and "vegetable cocktails."

CEREALS and BREADS: Whole-grain or enriched cereals and whole-grain or enriched white bread should be used daily. These foods may be used in amounts necessary to meet caloric requirements.

FATS and SWEETS: These foods may be used in addition to the protective foods listed above, but not as a substitute for any of them. Avoid large amounts of fats or sweets, however. Too much will affect the appetite and may cause an undesirable gain in weight.

Sample Menu

Breakfast

Citrus fruit (4 ounces) *or* tomato juice (8 ounces)
1 egg Oatmeal
Toast made with whole-grain or enriched white bread
Butter *or* fortified margarine
Coffee *or* tea if desired

Noon Meal

Baked navy beans
Mixed vegetable salad
Pudding made with milk and egg
Whole-grain or enriched white bread
Butter *or* fortified margarine
Milk

Evening Meal

Liver (¼ pound)
Baked potato
Tomato and lettuce salad
Apricots *or* Peaches
Whole-grain or enriched white bread
Butter *or* fortified margarine
Milk

Between Meals

Milk, Graham crackers, fruit

General Suggestions Regarding Foods

Immediately following the blood donation, one or two cups of hot cocoa will provide a nourishing and stimulating beverage. If cocoa is not available, hot milk may be flavored by the addition of a little coffee or by other means.

Tasty Sandwiches

1. Ground, cooked liver plus chopped celery seasoned with onion juice and salad dressing is good on dark rye bread.
2. Ground, dried apricots, prunes, and raisins softened with lemon juice are excellent on whole wheat, date and nut bread. This particular suggestion, of course, is dependent upon the availability of dried fruit to the civilian population.
3. Mashed, cooked navy beans mixed with relish, are particularly good on Boston brown bread.
4. Peanut butter and raisins mixed with orange juice are good on oatmeal bread.
5. Ground ham, hard-boiled eggs, pecans and green peppers mixed with mayonnaise are best on raisin whole wheat bread.

Liver Combinations

1. To give added flavor, cover liver with tomato or tomato juice and bake. For variety, add onions, green peppers and celery. For convenience, liver may be simmered rather than baked in the oven.
2. When buying meat for meat loaf or meat balls, have a small proportion of liver ground with the meat.
3. Liver and tomato with spaghetti, parsley and onion makes a good main luncheon dish.
4. Liver may be added to soup or stews as desired.
5. Soybean flour can be used as an extender for ground meat, including liver.

Sweet Snacks

1. Ground, dried raisins, apricots, prunes and nuts softened with lemon juice may be formed into balls and dipped into brown sugar. This makes an excellent candy substitute. This treat must be saved, however, for those occasional days when dried fruit appears on the market.
2. Whole wheat fruit cake, soybean nut bread, Graham muffins, oatmeal cookies and peanut butter cookies make any meal more satisfying.
3. Molasses, sorghum and maple syrup are good sources of iron. Corn syrup and brown sugar also contain some iron and may advantageously be used as substitutes for granulated sugar.

Can We Eat Our Way to Health or Disease?[1]

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THE title of this address is so comprehensive that it covers every possible aspect of the use of food in relation to health and disease—far too large a subject even to approximate in a few minutes. I propose, therefore, to discuss some of the chief fallacies which have surrounded the campaign for improved nutrition made necessary partly by the needs of the war effort, and partly by the tremendous advances of importance that have been made in our knowledge of nutrition during the last quarter of a century.

It is true that we have learned more about adequate nutrition of the human being in the last twenty-five years than we had learned in all the previous centuries of the life of man on this earth. The story of nutrition is not necessarily the story of a few essential ingredients, like the vitamins or the minerals. Man does not live by vitamins, iron, iodine, and calcium alone. Indeed, if there is any most important single fact to be evolved from the accumulated knowledge of recent years, it is the realization that the human being needs for his survival, if not for optimum health, a tremendous number of substances which might be briefly summarized as proteins, carbohydrates, fats, minerals and vitamins.

We must bear in mind, however, that the proteins include a considerable number of amino acids and that the number of significant minerals used by the human body may reach a score or more. The importance of trace elements is only beginning to be emphasized. Nevertheless, one sees promotions of one kind or another which point out that health can be secured if one will only take a mixture of vitamins and minerals which seem by some occult method to have been selected through divine inspiration for emphasis by the manufacturers of auxiliary capsules, tablets, pills, elixirs, or other concoctions.

The scientist who has devoted himself to a study of nutrition is careful to say that sound nutrition depends primarily on proper selection, preparation, consumption and absorption of foods, because only by eating foods as a whole can we be certain to secure the necessary amounts of substances which may as yet be unknown but which may play a vital part in the nutrition of the human being.

[1] Presented before a Luncheon Meeting of the Fifth Annual Congress on Industrial Health, Chicago, January 13, 1943.

GENERAL NUTRITION

We are a nation given to slogans. The concept that "food will win the war" is a reasonably sound slogan. There is no question but that food was essential in winning World War I and that the chief consideration in postwar planning is restoration of sound nutrition to the peoples who have suffered as a result of war. Already most of the stress in postwar planning for World War II is being placed on restoration to health of those nations which have been most actively participating in the conflict, by the supplying of foods and by their proper distribution. Nevertheless, the indiscriminate distribution of great quantities of foods is wasteful and will not so certainly solve the needs of the peoples concerned as will a scientific study of the primary deficiencies that exist and the disease and degeneration that have resulted from such deficiencies, and the supplying of proper amounts of those foods and of those specific ingredients of food that have been most deficient and are, therefore, most necessary.

Indeed, those governmental agencies which are concerned with postwar planning for aid to the needy nations will do well to bring in as early as possible the advice of scientific bodies capable of making scientific diagnoses of nutritional needs in order that the treatment may be reasonably specific.

INDISCRIMINATE USE OF VITAMINS

Our knowledge of the vitamins, accumulated largely since 1910, is certainly one of the most significant of all the advances of medical and nutritional science. Nevertheless, the very nature of these products and the marvelous results possible of achievement by their use have led to indiscriminate distribution and employment and to extraordinary wastage of money and materials. Such uncontrolled wastefulness is particularly distressing when all the rest of the world, much of which is already

starving, looks to us for their supply of these essential substances.

Our knowledge of the vitamins has been accumulated bit by bit, and the exploitation of the use of the vitamins has outstripped by far the actual knowledge on which such use is based. The naming of the vitamins with the letters of the alphabet certainly tended to promote such indiscriminate employment. Today great numbers of people who are at the same time consuming large quantities of butter, carrots and leafy green vegetables are taking one to three capsules a day containing 5000 units of vitamin A. Americans, who are the largest consumers of citrus fruits and tomato juice, and who have quantities of such materials still available, continue to take tablets and other preparations of vitamin C while England and Russia, which are definitely short of these substances, place requests through the Lend-Lease Administration for millions of ounces of ascorbic acid. Our War Production Board has already placed limitations on the sale and use of these vitamins in concentrated form. The food supply of our people, even with rationing, is sufficient to permit every one of us to get adequate amounts of vitamins A and C in our diets if we will only choose and use wisely.

The deficiency diseases which result from the limited use of foods containing certain vitamins have been largely recognized. The increased study of such diseases and the isolation in chemically pure form of many vitamin products must lead eventually to recognition of their specific usefulness in disease conditions. The time will come when we will demand proper diagnosis of the deficiency disease concerned and direct application of the specific vitamin for the control of that condition. That time will come when the public realizes that vitamins for the treatment of disease and for specific forms of malnutrition are wholly a professional problem. Today, however, the largely unrestricted manufacture, promotion, distribution and use of vitamins have taken away from this phase of nutritional and medical science the dignity necessary in a proper approach to problems of health and disease. Vitamin preparations are found in the drug and cosmetic sections of department stores, on the counters of self-service groceries, and are slyly recommended by barbers and beauticians in cosmetic "shoppes" and tonsorial emporiums for everything from rejuvenation to the restoration of color and luster to graying hair.

ESSENTIAL FOOD FACTS

The Council on Foods and Nutrition of the American Medical Association has been publishing in a series of articles established facts regarding nutrition in relation to health and disease. While the material thus far available, accumulated even in condensed form, will occupy some hundreds of pages, it is nevertheless merely an indication of the vast amount of unexplored territory that yet remains. Some facts, however, already emphasized, deserve repetition.

1. We are a careless people. We fortify our foods with riboflavin; then we leave a bottle of milk standing in the sunlight for an hour so that it loses most of its riboflavin.

2. We shop carelessly, selecting our foods for the pictures on the packages rather than with a knowledge of their actual food values.

3. We prepare food carelessly; fruits cut for salad or cabbage shredded for cole slaw loses one-fourth of its vitamin C by standing exposed to the air hours before use.

4. We cook our foods into food deficiencies, throwing away the water from vegetables and destroying vitamin values by long heating.

5. Oleomargarine, suitably enriched with vitamin A, is a good source of fat in the diet. However, it is just oleomargarine enriched with vitamin A. We are not yet certain that it is in every way equivalent to butter.

6. The old idea that fats were unnecessary in the diet is no longer acceptable. New standards suggest that we eat about the same number of calories in fats as in carbohydrates and that about 15 per cent of the diet must be protein. We should regulate the quantity of food to the amount of energy required and make certain that food taken in these amounts supplies the essential substances of which we now have knowledge.

7. The problems of infancy and of old age related to nutrition are special problems. Old people do not eat properly in relation to their diminished output of energy; neither do they select the necessary ingredients. Proper nutrition for old people might give us a greater number of men and women beyond sixty years of age capable of standing erect, working efficiently, and more free from the aches and pains which were formerly accepted as an inevitable accompaniment of the sixth and seventh decades of life.

8. Nobody knows how many factors actually constitute the vitamin B complex. There are at least twelve. The evolution of our knowledge of this vitamin can serve as an example of the manner in which we are progressing and of the danger of drawing conclusions that are too hasty in relation to essential substances.

9. Indiscriminate mixtures of vitamins and minerals have never been approved by any scientific body in the field of nutrition. When the Council on Foods and Nutrition announced its action regarding mixtures, it recognized the necessity for such mixtures as the vitamin B complex. It did not approve and has never approved mixtures with all the known vitamins and extra minerals.

10. The human being is constituted with a stomach and some thirty feet of intestines which require food for their functional efficiency. Man is not made for a diet of pills and capsules.

A Simplified Method of Preparing Infants' Formulas[1]

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THIS paper describes a simplified method of preparing infants' formulas which is employed by the Babies Hospital of the City of New York. In studies of formula room practice in other hospitals and through talks with dietitians we have found a wide diversity of procedures. Many of them appear needlessly complicated. The efficiency of a formula room should be measured by its ability to produce formulas of the highest bacteriological purity and chemical accuracy with the greatest economy of time, money, and labor. Since we believe that our method achieves this aim we offer it for comment and discussion.

In our procedure all the formulas are sterilized after they have been bottled. This eliminates to a large degree the chance of bacterial contamination, including transmission of air-borne viable organisms. Furthermore, it simplifies the work of the formula room because it saves the time and labor involved in boiling the equipment before preparation.

CENTRAL FORMULA ROOM

All infants' liquid feedings throughout the Columbia-Presbyterian Medical Center are prepared in the formula room of the Babies Hospital. These include the formulas for the infants in the obstetrical service of the Sloane Hospital, the infant service of the Babies Hospital, and the infant patients in other units such as the Institute of Ophthalmology, and the Neurological Institute. Bottles for approximately one hundred and twenty infants are filled daily. In addition, orange juice, which is given routinely to newborn infants, is bottled. Also, all solutions used for oral administration to infants, such as corn syrup water, physiological sodium chloride, and glucose in physiological sodium chloride are prepared in the formula room. The room is used for no other purpose.

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PERSONNEL

The work is done by four paid employees under the supervision of a dietitian. One, called the formula room assistant, prepares and pours all the standard formulas and marks the identification tags for the bottles. Two maids make the solutions of corn syrup and other solutions, assist in tagging and capping bottles, clean the equipment and the room. One man delivers the formulas to the various wards and nurseries, collects the used bottles and washes them.

EQUIPMENT

8-ounce feeding bottles, nipples and caps to protect nipples
Metal racks which hold 6 or 8 bottles
1000-cc. conical glass graduates
Rotary dietary 1000-gram scale
Large containers in which to mix formulas
Pitcher, funnels and mixing spoons
Metal containers for boiling nipples
Tags for labeling racks (made of paper which has been specially processed so that it will not disintegrate in hot water or steam)
Indelible ink for marking tags
Rubber bands for attaching tags
Hot water sterilizers (capacity 20 to 24 racks)
Monel metal sink with two sections for washing bottles
Bottle brushes

Work tables with monel metal tops
Shelf above table for bottles (at eye level for ease in filling)
Table for checking formulas
Small 4-burner gas stove
Refrigerator
Cart with 3 shelves for delivering bottles, specially designed to accommodate bottle racks efficiently; shelf capacity 20 racks per shelf; equipped with drop doors and rubber bumper
Hand sink, cupboards and closets for storage of supplies and cleaning equipment

STANDARD FORMULA

The pediatricians on the staff of the Columbia-Presbyterian Medical Center have simplified the procedure still further by using a standard formula for all newborn and young infants. A standard formula is not essential to this procedure, but a standard formula may be prepared in bulk which increases the efficiency of the formula room.

The standard formula which is employed throughout the Columbia-Presbyterian Medical Center consists of one-third evaporated milk, two-thirds water, and five per cent cane sugar by volume.

Evaporated milk is economical. It is also satisfactory from the point of view of digestibility. The fat has been homogenized and the protein altered by high temperature so that a finer and softer curd is formed during gastric digestion.

Cane sugar is used because it is cheap and simple. There has been no convincing proof that on the average any one carbohydrate is better than another. We have thus far encountered no difficulty in obtaining cane sugar.

PROCEDURE

An outline of the procedure used in making the formulas follows:

Used bottles, caps, and nipples are collected twice a day from the various nurseries and wards by a formula room employee. When the bottles arrive in the formula room, they are washed with warm soap-suds, scrubbed with a brush, rinsed in hot running water, and drained upside down. The caps are scoured, washed in warm soap-suds, and rinsed in hot water. Nipples are thoroughly washed inside and out with soap-suds, rinsed, then boiled in a metal container over the direct flame for 5 minutes.

The order for the formula for each infant is sent to the dietitian in the formula room on an individual card. For example, the card would read:

Floor N-24	Dec. 15
Baby Jones	Age 2 weeks
Standard formula	
120 cc. × 5 feedings	

From these cards the total amount of standard formula which must be made up for the whole service for 24 hours is computed. The required amounts of evaporated milk, tap water, and cane sugar are mixed in bulk. On a representative day 14,850 cc. evaporated milk, 29,700 cc. water, and 2230 gm. cane sugar were used. For speed in preparation warm water is employed. Clean but unsterilized equipment is used throughout the process. The mixture is covered, placed in the refrigerator, and transferred as needed into smaller containers for ease in pouring. None of the mixture remains in the refrigerator longer than 4 hours before it is sterilized.

A bottle rack for each infant is tagged with a label which bears the infant's name, the location of the nursery or ward, the amount and number of feedings, and the date. Clean unsterilized bottles are put in the rack according to the number of feedings required. The card describing the formula is placed on the rack. The formula is poured according to the card, using the graduations on the bottle to determine the amount. A nipple is put on each bottle and covered with an aluminum cap, the cap loosely applied so that the dissolved gases may escape freely during sterilization. The card is removed and hung on a file at the checking table. The racks of formulas are put into the steam sterilizer. It takes approximately seven minutes for the sterilizer to reach 100°C., after which the formulas are held at that temperature for 30 minutes. All bottles are checked by the dietitian according to the cards to be sure the correct number and amounts of each feeding were prepared. They are then delivered in a covered truck throughout the hospital, to be stored in refrigerators until needed. All that remains to be done in preparing a feeding for administration is to warm the bottle to the proper temperature and to remove the cap which covers the nipple.

This technique can be used for all special formulas, including those made with whole milk, powdered milks, or with milk substitutes as used in allergy diets. When whole milk is employed, the formula is prepared in the same general way, but a 3-inch square of sterile gauze is placed over the mouth of the bottle before the nipple is put on, so as to prevent the holes of the nipple from becoming clogged by the film of coagulum which forms on the surface during sterilization. This scum does not form with evaporated milk and powdered milks, so the gauze is unnecessary in most of our formulas. For thickened feedings, the formula with its added cereal is first partly cooked, then sterilized as described.

DISCUSSION

Advantages of the Method. There are many advantages in this method. First, sterilization after bottling prevents as far as possible the carrying of infectious agents to the infant. In other methods

there is far greater danger of bacterial contamination from a break in aseptic technique.

It saves time and labor. It is quicker to sterilize after pouring than to carry out sterile technique during preparation. A simple standard formula such as evaporated milk, water, and cane sugar can be mixed quickly in bulk, and the extra effort consumed in measuring the individual formulas is thus spared.

No time is wasted in training new people every two or three weeks as is the case when student nurses pour the formulas. After an employee has been trained to prepare formulas it is her regular job. She assumes responsibility and maintains interest in her work because it is her job.

It places all the responsibility on one person—the dietitian in charge of the formula room who supervises the entire process.

It saves laundry. It is not necessary for the persons working in the formula room to wear masks, caps, and gowns, except when sterile technique is being used to make up special formulas as described later.

It adds to the comfort of the employees. Windows may be kept open; this makes the room much more comfortable, especially when the sterilizers are in operation. This is only an advantage in rooms which are not air-conditioned. Air-conditioning is desirable because it accomplishes the double purpose of cooling and taking the excessive moisture from the air. Needless to say, unless a room is already air-conditioned, it is probably out of the question to make any changes for the duration of the war.

It reduces the budget. A formula based on the use of evaporated milk and cane sugar is inexpensive. The use of a standard formula throughout a large general hospital further reduces the cost. If individual formulas are used, made from different grades of whole milk, and from proprietary foods, most of which are expensive, the necessity of keeping on hand a large variety of products will greatly increase the cost of operating a formula room.

Controversial Points. We have tried to anticipate some of the controversial points and to answer some of the objections which may arise regarding this method.

The measurement of the amount of formula which is introduced into each bottle may not appear to be sufficiently precise, since reliance is placed on the graduations cast in the bottle. However, the modern view of the problem of feeding infants places more reliance on the subject's appetite than the pediatrician's exact anticipation of the requirements at each meal. Consequently a moderate excess or even a deficiency of formula is of comparatively little importance. Furthermore, it is reasonable to suppose that the error involved in measuring the compound mixture only once (on the assumption that the graduations on the bottle are inaccurate) will not be any greater than the sum of errors concerned in the more elaborate technique of mixing each formula individually, measuring each feeding in a graduate and then pouring it into a bottle.

The student nurse does not receive essential training in the formula room. While many institutions consider their formula rooms as a laboratory for the training of student nurses, we believe that the hospital formula room is a poor place to train nurses. We concede that our methods of making a formula in the hospital and making a formula at home are practically the same, but the abundance of suitable equipment in a formula room gives the nurse no true concept of the problems which she may encounter if she has to make a formula in a home where the equipment is less adequate. The student nurses in the Babies Hospital have two laboratory classes in making formulas, using home equipment. In addition they spend two hours observing in the formula room; during this time they make up one standard formula using hospital equipment. We believe that devoting more time to this would be of little value.

True, the evaporated milk is boiled; but evaporated milk has already been processed at 115°C. for at least 15 minutes. We take the view that the destruction of the vitamins will not be significantly greater by further heating at 100°C. than has already occurred at 115°C.

Vitamin C admittedly is destroyed by boiling. Since this vitamin has already been destroyed in the process of evaporation, further exposure to high temperature makes no difference. Moreover, we do not depend on milk to furnish the vitamin C in the infant's diet. On the newborn service, orange juice or ascorbic acid is given regularly to all infants from the age of 7 days. There has, of course, been some destruction of thiamin in the process of evaporation. We do not know if there is any further destruction by a second heating.

Aluminum caps—which can no longer be obtained—are being used to cover the nipples. Glass caps, which will stand sterilizing and will serve just as well, are available. However, there will be more breakage in transportation if the nurseries are far removed from the formula room, and the storage of the glass caps not in use will be more of a problem. Glass caps are entirely satisfactory in a small formula room or in the home. The problem of covers for the nipples has been submitted to the manufacturers of paper dishes. Paper coffee cups which have not been waxed will stand up under the sterilizing process. If covers shaped like the aluminum caps could be made of the same material as paper

coffee cups and supplied cheaply enough so that they might be destroyed after use, one of the present problems of a formula room would be solved.

Formulas in Which the Consistency is Altered by Boiling. The previously described method cannot be used in the preparation of banana powder mixtures and lactic acid formulas because their physical properties are altered by boiling. Sterile technique, such as is usually employed in institutional formula rooms, is used for these formulas and for the bottling of orange juice. Windows are kept closed during the procedure. The person pouring the formula washes her hands and puts on a mask, cap, and gown. The bottles and all equipment used in making the formulas are boiled for 10 minutes. The equipment is handled with sterile forceps. The work surface is covered with sterile towels. Even with these precautions, the formula will not be sterile because we do not attempt strict surgical asepsis and because it is impossible to keep sterile the contents of a can which has been opened. Most dry products come in large containers which hold more than a 24-hour supply.

Additional equipment and supplies, as listed below, are needed in the preparation of these formulas:

250-cc. conical glass graduates
Strainer
Metal bowls
Rotary egg-beaters
Double boiler
Large forceps
Orange squeezer
Sterile towels, masks, gowns, and caps

Preparation of the Formula in the Home. The method of making a formula at home is exactly the same as that used in the formula room, except that the formula is held at the temperature of boiling water in the sterilizer for only 10 minutes. If the mother cannot afford a sterilizer, she is taught to boil the milk, water, and sugar together for 2 or 3 minutes directly over the fire, pour immediately while hot into bottles which have been freshly boiled, stopper at once with boiled nipples and promptly cover the nipples with glass caps which have just been boiled.

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Sugar and Other Commercial Sweets

In nature the sweetness of the nectar of a flower is quite clearly a bait to secure the visit of the bee and the distribution of the pollen by his agency. The sweetness of the flesh of a fruit guides animals to consume something that contains not only sugar but also significant amounts of mineral elements and vitamins; and in baiting the animal to eat the fruit it also serves the plant by securing distribution of its seeds.

The biological utility of artificially refined sugar is much more circumscribed. Nutritionally it is the extreme case of a one-sided food; for it furnishes calories and nothing else.

The repeated research findings of Bunting and others, that increasing prominence of sugar in the dietary means increasing proportion of tooth defects in children, should not be ignored.

It is probably true for the people as a whole, as was said in a discussion of the problem of sweets for children (published as a leaflet by the American Child Health Association and reprinted by the American Public Health Association in a report of its Committee on Nutritional Problems), "that in general the proper place of sugar in the food supplies and eating habits . . . is not in such concentrated forms as candy, or in the indiscriminate and excessive sweetening of all kinds of foods, but rather as a preservative and flavor to facilitate the introduction into the . . . dietary of larger amounts of the fruit and the milk, the importance of which to . . . health has been increasingly emphasized with each year's progress in our knowledge of nutrition.—*Sherman, H. C., and Lanford, C. S.: Essentials of Nutrition, p. 320. New York: The Macmillan Company, 1943.*

Calcium, Phosphorus, and Iron Content of Minnesota Vegetables[1]

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A BETTER understanding of the nutritive value of foods grown in different areas is essential to an evaluation of their contribution to the American dietary. This information becomes of increasing importance as the exactions of the war tend to limit people to vegetables grown in their own communities. A study was undertaken of a variety of vegetables available in the fall of the year grown in four communities in the western part of Minnesota[2] and three communities on the Iron Range.[3]

PROCEDURE

Root vegetables were prepared for analysis by thoroughly scrubbing with a stiff brush and washing repeatedly until freed from all adhering soil. They were then washed with 10 per cent glass-distilled hydrochloric acid followed by three rinsings with glass-distilled water. Certain of these vegetables were sampled both before and after paring, using a sterling silver knife. The outer leaves of the cabbage were removed before sampling as were also the skins of the onions. All vegetables were cut into small pieces and air-dried to constant weight in a covered glass dish at a temperature below 90° C. The dried samples were ground in a glass mortar until they would pass through a fine copper sieve. Samples were ashed in triplicate in silica crucibles and analyzed for calcium and phosphorus using the method of Morris, Nelson and Palmer (1), and for iron by means of the dipyridyl method as modified by Andrews and Felt (2). A Coleman spectrophotometer was used for the iron determinations. Samples were protected from iron contamination by keeping them covered at all times. All equipment was treated with glass-distilled hydrochloric acid and only glass-distilled water was used for rinsing equipment and making solutions.

RESULTS AND DISCUSSIONS

A comparison of the calcium values of the Minnesota vegetables with the food composition tables of Sherman (3) shows that although occasional samples exceeded in calcium content the published means, the majority fell below these values. The phosphorus content approximated fairly well the published figures, while those for iron were definitely lower. In connection with the latter, it may be suggested that the low values secured in the current study are the result of the precautions taken in avoiding iron contamination.

Consistently lower values for both calcium and iron were obtained for the pared vegetables as contrasted with the unpared samples, while no such losses were apparent for phosphorus. That appreciable differences may occur between different vegetables grown in the same locality is also evident from the table. To illustrate, the calcium content of pared beets grown in the western part of Minnesota ranged from 9 to 17 mg. per 100 gm.; phosphorus, from 15 to 28 mg.; and iron, from 0.31 to 0.53 mg. Similarly, the calcium values for the pared potatoes grown in the western area varied from 3 to 10 mg.; phosphorus, from 48 to 77 mg.; and iron, from 0.30 to 1.45 mg. per 100 gm. The marked effect of field differences on the mineral composition of potatoes was recorded in an earlier report from this laboratory (4).

A high iron content of the soil does not necessarily predicate an increased amount in the vegetables, as evidenced by the fact that those grown in the communities on the Iron Range, where the soil is high in iron, are not richer in this element than those grown in the western area.

Since the vegetables reported in this paper can

[1] Paper No. 2058, Scientific Journal Series, Agricultural Experiment Station, University of Minnesota. Received for publication January 22, 1943.

[2] In Norman, Swift, Yellow Medicine, and Clay Counties.

[3] In St. Louis and Itasca Counties.

Mineral content of Minnesota vegetables

	AREA	COMMUNITY	CALCIUM, GM./100 GM. FRESH WEIGHT		PHOSPHORUS, GM./100 GM. FRESH WEIGHT		IRON, MG./100 GM. FRESH WEIGHT	
			Pared	Not pared	Pared	Not pared	Pared	Not pared
Beets	Western	1a	0.009	0.013	0.028	0.030	0.39	0.65
	Western	2	0.009	0.011	0.026	0.030	0.31	0.62
	Western	3	0.017	0.017	0.015	0.015	0.49	0.93
	Western	4	0.014	0.019	0.017	0.021	0.53	1.04
	Iron Range	1	0.011		0.044		0.47	
	Iron Range	2	0.019		0.055		0.59	
Cabbages	Western	1a		0.037		0.031		0.74
	Western	2		0.031		0.033		0.28
	Western	3		0.062		0.033		0.45
	Iron Range	1		0.065		0.053		0.37
	Iron Range	2		0.124		0.059		0.58
	Iron Range	3		0.037		0.030		0.21
Carrots	Western	1a	0.030		0.050		0.56	
	Western	1b		0.037		0.041		0.59
	Western	2	0.030		0.054		0.33	
	Western	3	0.044		0.048		0.25	
	Western	4	0.027		0.030		0.36	
	Iron Range	1	0.027		0.034		0.22	
	Iron Range	2	0.022		0.024		0.31	
	Iron Range	3	0.031		0.024		0.26	
Onions	Western	1a		0.018		0.042		0.17
	Western	2		0.018		0.037		0.13
	Western	3		0.026		0.033		0.24
	Western	4		0.012		0.028		0.28
	Iron Range	2		0.034		0.050		0.35
Potatoes	Western	1a	0.007	0.008	0.056	0.056	0.64	0.68
	Western	1b	0.006	0.012	0.048	0.048	0.79	1.29
	Western	2	0.006		0.077	0.070	0.30	0.40
	Western	3	0.010		0.067		0.34	
	Western	3	0.008		0.054		0.33	
	Western	4	0.004		0.065	0.064	0.70	0.83
	Western	4	0.003	0.004	0.053	0.054	1.45	1.51
	Iron Range	1	0.005	0.007	0.037	0.038	0.51	0.86
	Iron Range	1	0.006		0.052		0.45	
	Iron Range	2	0.006	0.007	0.039	0.040	0.74	0.84
	Iron Range	3	0.005	0.009	0.048	0.049	0.43	0.45
Rutabagas	Iron Range	1	0.032		0.045		0.30	
	Iron Range	2	0.030		0.045		0.28	

be stored and constitute the chief sources of fresh vegetables throughout the winter months, a knowledge of their mineral value is of immediate concern. An evaluation of these vegetables as sources of minerals shows that they make a minor contribution to the calcium content of the diet, a somewhat better, but still not considerable, addition to the phosphorus, and are of greatest value as sources of iron.

REFERENCES

(1) MORRIS, H. P., NELSON, J. W., AND PALMER, L. S.: Quantitative determination of calcium, magnesium, and phosphorus in feedstuffs and cattle excreta. Indust. & Engin. Chem., Anal. Ed. 3: 164, 1931.

(2) ANDREWS, J. S., AND FELT, C.: The iron content of cereals. Cereal Chem. 18: 819, 1941.

(3) SHERMAN, H. C.: Chemistry of Food and Nutrition, 6th ed. New York: The Macmillan Co., 1941.

(4) LEICHSENRING, J. M., AND DONELSON, E. G.: The effect of fertilizer treatment on the calcium, phosphorus and iron content of potatoes. Food Research (in press).

Nutritional Failure Among Private Patients[1]

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A DIETARY study of 225 private patients from the upper middle class group was undertaken in 1940 (1) in order to determine whether dietary deficiencies were present, and to compare the prevalence of these deficiencies with the incidence of specific deficiency syndromes related to these (2).

METHOD

Each patient filled out a diet questionnaire for one week, recording the specific amounts of foods eaten both during and between meals. When the patients returned a week later with their questionnaires completed we reviewed their diets with them, and also suggested dietary changes in line with their specific ailments.

The quantities of food recorded on the questionnaires were then calculated in order to determine the amount of essential nutrients provided, using Bowes and Church's figures (3). The diets were then scored on the basis of the recommended daily allowances set up by the Committee on Food and Nutrition of the National Research Council, allowing a 5 per cent deviation for all factors except calories in which case we allowed a 10 per cent deviation. We then accumulated our data to determine how many diets were deficient in vitamin A, thiamin, etc.

After securing medical and nutritional histories, and after conducting physical and nutritional examinations, indicated laboratory tests and roentgenological studies of these 225 patients, we compared the prevalence of dietary deficiencies with the prevalence of deficiency signs and symptoms.

Table 1 shows the occurrence of dietary deficiencies and the occurrence of deficiency syndromes. For the purposes of this study, we decided that a person manifested a vitamin A, thiamin or other deficiency when he displayed one or more specific signs and complained of one or more specific symptoms claimed to be attributable to early manifestations of that specific deficiency.

It is interesting that more patients seemed to exhibit syndromes indicating vitamin A, thiamin, riboflavin, ascorbic acid and calcium deficiencies than their diets would have implied. Dietary deficiencies with respect to protein and iron as shown by the dietary histories were more prevalent than the specific syndromes related to deficiencies of protein and iron. This was due to the fact that the signs and symptoms of these two deficiencies, other than anemia, edema, polyuria, and nocturia, are not too well defined and include general conditions such as fatigue, underweight, etc., which may be due to a deficiency in other nutritional factors as well and therefore could not be considered in our estimation of the prevalence of specific syndromes.

TABLE 1

Comparison of prevalence of dietary deficiencies with indicated prevalence of associated deficiency syndromes

	PATIENTS WITH DIETARY DEFICIENCIES	PATIENTS INDICATING DEFICIENCY SYNDROMES
	per cent	*per cent*
Riboflavin	77	80
Thiamin	76	85
Calories	74	—*
Calcium	46	48
Iron	40	11
Protein	36.5	27
Vitamin A	26	42
Phosphorus	24	24
Ascorbic Acid	13	31

* Since so many patients had too few calories and yet so few were underweight we did not consider the deficiency syndrome attributable to caloric deficiency.

We attribute the increased incidence of deficiency syndromes, over and above the incidence indicated by the dietary histories to somatic factors interfering with supply.

NUTRITIONAL FAILURE

Nutritional failure is a state of suboptimal nutrition in which aberrations appear in the skin and its

[1] This study was made possible by a grant from White Laboratories, Inc., Newark, New Jersey. Received for publication, December 10, 1942.

appendages, the eyes, lips and oral surfaces, the gastrointestinal tract, the genito-urinary tract, the cardiovascular system, the extremities, etc. Nutritional failure, according to Jolliffe *et al.* (4), is due either to "dietary inadequacy"—failure to ingest an essential nutritional factor or factors in amounts sufficient to meet the existing requirements of the body; or to "nutritional inadequacy"—failure to digest, absorb, fabricate and store in the liver, distribute, utilize and retain the formed elements derived from food. In addition we are of the opinion that psychogenic disturbances also bring about nutritional failure since undue worry, anxiety or emotionalism may interfere with digestion.

Among these 225 patients somatic factors, bringing about nutritional inadequacy, and psychogenic disturbances were very prevalent, accounting for the increased incidence of deficiency syndromes. Thirty of the patients had histamine achlorhydria (no free hydrochloric acid);[2] 70 exhibited impaired motility, in that the food either took too long to be digested and as a result the digestive system was not ready to work on the next meal when ingested, or the food was whipped through the intestinal tract causing a loss of many of the nutrients. Ninety-two patients had gallbladder infections, 29 had hyperthyroidism and 19 had hypothyroidism—all of which interfere with absorption. Ninety-six patients had infections which increase metabolism and in turn increase demand. The presence of these conditions indicated that not all of the nutrients ingested ever reached the site of demand, the body cells, and therefore deficiency syndromes developed in spite of an adequate intake. It is important, therefore, for the dietitian and nutritionist to recognize the limitations of diet alone. However, according to a writer in *Nutrition Reviews* (5): "although dietary studies do not directly measure the incidence of malnutrition, they furnish the best means now available to uncover likely areas of malnutrition before severe degrees of deficiency develop. They are therefore a most valuable public health tool. An inadequate diet stands in need of correction regardless of what evidence of deficiency disease the physician is or is not able to uncover."

NUTRITIONAL CONSULTATION

After the study of 225 patients was completed, a study of the diets of patients before and after dietary consultation was undertaken in order to determine how effective these consultations were in evoking changes in the patients' diets. For this study, patients were selected at random. Each filled out the food questionnaire previously described, for one week, and then received suggestions as to how to improve his diet. A few months thereafter each patient was requested to fill out a second food questionnaire, recording the food eaten for one week. The patients were cautioned against making an inaccurate record—it was emphasized that we were interested in what was consumed regardless of whether the dietary pattern was in line with the suggestions offered.

[2] We have found that usually an intolerance to milk is linked with achlorhydria. Adding hydrochloric acid to milk in the majority of cases will make the milk tolerable.

TABLE 2

Dietary deficiencies as shown by records kept by subjects for one week

	BEFORE CONSULTATION	AFTER CONSULTATION
	per cent of patients	*per cent of patients*
Protein	41	8
Calories	77	68
Vitamin A	36	8
Excess calories	2	0
Thiamin	94	66
Riboflavin	81	48
Ascorbic Acid	13	2
Calcium	48	17
Phosphorus	26	4

TABLE 3

Comparison of food consumption as shown by records kept by subjects for one week

	BEFORE CONSULTATION	AFTER CONSULTATION
	per cent of patients	*per cent of patients*
1 pint milk daily	33	80
1 serving meat, fish or poultry daily	72	91
2–3 slices whole wheat or enriched bread (or its equivalent in cereal) daily	28	86
2–3 tbsp. butter, cream or fortified oleomargarine daily	62	81
2 servings vegetables daily	78	96
2 servings fruits daily	67	94
(one of which was a citrus fruit)	70	96
3–5 eggs weekly	70	79
More than 1 cup coffee or tea daily	59	23
Alcohol regularly	17	6
Many rich desserts	53	27

Since the majority of the patients did not cooperate as well as had been anticipated and many considered keeping a second record a nuisance, complete records were obtained for only 85 (6).

Both sets of questionnaires were then calculated, using Bowes and Church's tables (3). We also recorded, in both instances, how many patients adhered to the dietary yardstick prescribed. It should be emphasized that after consultation each patient was given an individual dietary pattern to take home

and follow, and in all cases this pattern was built around his previous diet; *i.e.* the food items that were good from the nutritional standpoint were retained and new foods added to make up a well-rounded diet. We mention this because in spite of complete and clear instructions the majority did not adhere strictly to everything suggested. It is interesting to note the changes in the diets and how consumption of the different foods varied as shown by the findings in both cases. Tables 2 and 3 point out the differences in dietary deficiencies and food consumption. As will be noted, in all cases improvement is shown after consultation.

The reasons offered for not consuming adequate amounts of the essential nutrients include: ignorance of the importance of a particular food; indigestibility of a food; constipating or too laxative effect of a food; adherence to food fads; supposition that certain foods are fattening, and so on.

We know that food likes and dislikes are influenced by economic background, aesthetic training, traditional conflicts, national, regional, religious and age differences, and differences in childhood training (7). Why certain individuals like one food and dislike another is something for the clinician and the nutritionist to ponder. In changing food habits we should realize that "the selection of foods is determined (1) by their taste, (2) because they meet a physiological need, and (3) by their novelty" (8).

SUMMARY AND CONCLUSIONS

Three studies were conducted among private patients: the first, a dietary survey of 225 patients; the second, a study of the relationship between dietary deficiencies and their specific deficiency syndromes; and the third, a dietary study of 85 patients to determine the effectiveness of consultation. These studies lead to the conclusion that nutritional failure is very prevalent among upper middle class individuals, and that the diets of these individuals should never be taken for granted as being "adequate."

The third study in this series proves that nutritional consultations are effective and should be utilized in making sick patients well and keeping those who are well in that condition.

We are of the opinion that requesting patients to keep weekly records of their food intake is an invaluable aid in improving health. However, we do not consider it necessary to have the patients keep a second weekly food record at some time after consultation. It is advisable, however, that the clinician or nutritionist check with the patient from time to time to make certain that dietary suggestions are being followed.

We feel that the only way the nutritional status of Americans can be improved is for the clinician and nutritionist to work hand-in-hand in providing a "good" diet where a "poor" one has existed, only after the cause of the difficulty has been determined.

REFERENCES

(1) KELLY, H. T., AND SHEPPARD, M.: A dietary survey of individuals from upper middle class groups. New England J. Med. (In press.)
(2) KELLY, H. T., AND SHEPPARD, M.: The incidence of deficiency syndromes. (To be published.)
(3) BOWES, A. DEP., AND CHURCH, C. F.: Food Values of Portions Commonly Used. Fourth edition. Philadelphia: College Offset Press, 1942.
(4) JOLLIFFE, N., MCLESTER, J. S., AND SHERMAN, H. C.: Prevalence of malnutrition. J. A. M. A., 118: 944, 1942.
(5) The evaluation of nutrition surveys. Nutrition Rev. 1: 76, 1943.
(6) KELLY, H. T., AND SHEPPARD, M.: Study on effectiveness of dietary consultations. (To be published.)
(7) SELLING, L. S.: Some psychological aspects of nutrition. J. Am. Dietet. A. 18: 741, 1942.
(8) DORCUS, R. M.: Food habits: Their origin and control. J. Am. Dietet. A. 18: 738, 1942.

Nutrition and Resistance to Disease

Reports on the relation of nutrition and resistance to disease are not confined to the effect of vitamin deficiencies. A recent report . . . presents investigations on the relation of protein, fat, and carbohydrate to "resistance to infection." In this study, young albino mice were fed diets varying in their content of protein, fat, and carbohydrate but with identical vitamin supplements. Growth on these diets was subnormal as compared with a stock diet and growth on the low protein diets particularly, was practically nil. After six weeks, the animals were injected with a standard multiple lethal dose of pneumococci and their survival time noted. Animals fed the high protein special diets died most quickly. No explanation is offered and no immunological measurements are reported. The time differences are not impressive and the author's use of statistical analysis does not strongly support the argument. However, the interpretation will certainly be made, especially at a time when the protein intake of so many peoples has been reduced by war, that a high protein diet is essential to safeguard against infection.—*Nutrition Reviews, 1: 66, 1943.*

Dehydrated Foods in the Army Ration[1]

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WHILE we know that the preservation of foodstuffs by drying is by no means new and in fact dates back to the time of the Pharaohs, this practice received but scant attention during the centuries between that period and our own. It was again brought to light, however, during the Civil War when small quantities of dried foods were used by the Union Armies, and again at the time of the Boer War when, it is reported, dried meat and vegetables were a part of the ration. In 1918 the United States Army began to purchase and use quite large quantities of dehydrated foods. These included potatoes, onions, carrots, turnips, and soup mixtures, amounting to a total somewhat in excess of eight million pounds. While this figure sounds impressive, it is small compared with the projected use of dried foods by our Army in this war.

Certain difficulties were encountered in the production and use of dehydrated foods during World War I, due to the limitation of our technical knowledge concerning these products at that time. I will refer to some of the problems later, and indicate what has been done to overcome them.

Following the close of World War I, an attempt was made to develop a consumer preference for the use of dehydrated foods. This effort, however, was largely unsuccessful due to many factors, among which were poor quality, high moisture content, inadequate packaging, and lack of knowledge regarding the best storage conditions for packaged dehydrated products. Unfamiliarity with proper cooking methods and use was another factor contributing to the lack of consumer acceptance. It is my opinion that at the end of this war certain items of dehydrated foods will become as common on our store shelves as are many of the present-day canned items.

Incidentally, from the Army's standpoint there is a difference in the usage and meaning of the terms "dehydrated" and "dried" or "evaporated." From a practical standpoint, dehydrated foods may be defined as foods from which the water content has been largely removed under controlled conditions of temperature, air velocity, and humidity. Dried or evaporated foods, in contrast to the dehydrated, may be defined as foods from which a large portion of the water has been removed under semi-controlled or uncontrolled conditions. Dehydrated foods have a much lower moisture content than dried or evaporated foods. Furthermore, we expect dehydrated foods, when reconstituted, to resemble closely the original product in appearance, odor, and flavor.

A good example of the differences between dehydrated and dried or evaporated foods is furnished by apples. Dehydrated apples, as called for in Army specifications, should contain not more than 3 per cent moisture. Dried or evaporated apples, on the other hand, are frequently sun-dried under little or no control, and retain a moisture content of approximately 23 to 24 per cent. Generally speaking, dehydrated foods, because of the more accurately controlled production, and specifically because of their lower moisture content, when properly packaged and stored will keep for longer periods of time without undue deterioration.

Adequate packaging and protection of dehydrated foods are essential to prevent any absorption of moisture. For example, a moisture content of 10 per cent in dehydrated foods frequently results in deterioration of a biological nature.

WHY DEHYDRATE?

The reasons for dehydration would appear to be obvious; however, more than one factor is of importance when considering the advantages of dehydrated foods. Among our present difficulties has been the lack of shipping tonnage. One of the most important factors to be considered in the prosecution of this war is that space known as a ship's ton. We are short of ship tons for shipping materials. Any method which will increase the number of ship tons, whether it be by actual construction of new facilities, or improved use of our present available tonnage, is a real contribution to the war effort. Dehydrated foods are tremendously reduced in weight and the space required is much less

[1] Presented before the American Dietetic Association, Detroit, October 19, 1942.

than that needed for fresh food. For example, one ton of fresh, raw, white potatoes will occupy approximately sixty-six cubic feet. When dehydrated, that ton of potatoes will occupy approximately thirty-one cubic feet. Research is under way which may reduce to an even greater extent the amount of space required.

Another contribution to the war effort by the use of dehydrated foods is apparent when we consider the container situation today. Many dehydrated foods can be packaged in nonrigid containers of impregnated or laminated paper or other materials, which releases metal for other uses. When properly packaged and stored, some items of dehydrated foods will keep longer than when preserved by other means.

Another advantage of dehydrated foods which appeals to the personnel of every mess in the Army, is that no preparation is required other than opening the container and adding the material to the prescribed amount of water for rehydration.

VITAMINS IN DEHYDRATED VEGETABLES

When properly prepared and processed under well-controlled conditions, 100 gm. dehydrated vegetable, according to the Dehydration Committee of the Bureau of Agricultural Chemistry and Engineering, U. S. Department of Agriculture, contains vitamins in the following amounts:

	THIAMIN	RIBO-FLAVIN	ASCORBIC ACID	PRO-VITAMIN A
	gammas	*gammas*	*mg.*	*mg.*
Beets	40	350	25	—
Carrots	300	300	20	90
Spinach	750	1150	150	40
Sweet Potatoes	200	320	35	5
White Potatoes	425	250	25	—

It is highly important that the enzymes, particularly peroxidase and catalase, be thoroughly inactivated prior to the dehydration operation. If this is not done, unfavorable reactions will result after packaging and during storage, presumably through the oxidation of constituents present in the dehydrated foods. Water blanching leaches out some of the soluble solids and vitamins of vegetables, as well as some of their minerals; steam blanching is not nearly so severe in this connection. Consequently our present specifications recommend the use of the steam blanch wherever feasible.

IMPORTANCE OF PROPER REHYDRATION AND COOKING METHODS

Preparation and cooking methods for dehydrated foods are necessarily somewhat modified from those used in the preparation of fresh, canned, or quick-frozen products. A manual for the use of Army cooks in the preparation and cooking of dehydrated foods, in the preparation of which we had the advice and aid of Mary I. Barber, will soon be available. It has been found experimentally, for instance, that you cannot use the same proportion of water for preparing 100 portions of a dehydrated food as when preparing 10 portions of the same food. In other words, when you have worked out a successful method for preparing dehydrated white potatoes for 100 men, it does not follow that you can simply divide by 10 and produce a product suitable in all respects. The recipes in this manual, therefore, are worked out for 100 men, for 8 men, and for 2 men. Even so, variations and difficulties will be encountered due not only to differences in the foods, but also in the water used in preparing the food. For instance, hard water frequently causes a toughening of the dehydrated product, as well as undesirable changes in color, particularly with vegetables containing red or green pigments.

Further investigations are needed, particularly with regard to the reconstitution and cooking of dehydrated foods. In this connection dietitians could make a real contribution. Many of you have supervised the preparation and cooking of dehydrated foods and we would be very glad to receive any information or reports of observations concerned with this problem.

FUTURE PROSPECTS

The future of dehydrated foods and their acceptance by the civilian consumer will be determined in part by technological improvements. We have not yet reached, by any means, the point where we believe that dehydrated foods are all that they should be.

The canning industry and the quick-frozen food industry each had its own period of development, when many of the difficulties were solved. This polishing operation cannot be accomplished overnight. The quick-frozen food industry found, for instance, that although there were many varieties of a single vegetable—peas, for example—suitable for canning, it did not necessarily follow that these same varieties were the best for the preparation of quick-frozen peas. In fact, I am informed that some 161 varieties of peas were tested for quick-freezing before the producers felt that they had what they considered to be a truly acceptable variety for freezing.

In the early days of quick-freezing it was believed that blanching prior to the freezing operation was unnecessary, a belief which proved to be unfounded. We have had similar parallels in the field of dehydrated foods. For instance in World War I blanching was neglected because its importance was not recognized. In the dehydration of vegetables, with one notable exception, it is now believed desirable

to blanch all vegetables prior to dehydration. Dehydration procedures are being steadily improved, and I have no doubt that in time the finished product will be greatly enhanced. Our knowledge and understanding of the behavior of dehydrated foods when packaged and stored are entirely inadequate. We hope soon to have information that will solve such problems as the development of undesirable odors and flavors in dehydrated carrots, even when stored under vacuum or inert gases.

It is difficult to predict the future of dehydrated foods, particularly from the consumer standpoint, after the war is over. It is not difficult, however, to predict the future of dehydrated foods from the standpoint of the Army during this present war, provided the quality of dehydrated materials we receive is satisfactory, and provided our cooks know how to prepare them properly. Dehydrated foods which the Army is buying at present include beets, cabbage, carrots, onions, white and sweet potatoes, and turnips or rutabagas, and in addition dried soups such as green and yellow pea (with or without curry powder), tomato, bean, and chicken concentrate. Another, a dehydrated mixed vegetable soup, is really excellent.

The Army is buying two other satisfactory items, dehydrated tomato juice cocktail and dehydrated cranberry juice cocktail. Additional items under consideration include dehydrated prune and apricot powder which when mixed with a small amount of sugar and water, produces a very acceptable spread to replace jams or jellies. One of the newer and more unusual products is dehydrated baked beans. Beans have always been a standard article of diet for our armed forces, but dehydrated baked beans, which require only the addition of boiling water and heating to produce a food comparable in every way with canned baked beans, are something new.

As to the future of dehydrated foods from the standpoint of the consumer, I think there is little doubt that certain items will find a ready acceptance; for example, prior to this war precooked dehydrated potato shreds were gaining rapidly in the institutional trade as a replacement for fresh potatoes in the preparation of mashed potatoes. Dehydrated onions, onion powder, garlic powder, eggs, and milk had a wide acceptance and use by certain manufacturers, and the use of dehydrated soup mixes was on the increase. Another item, not yet available to the retail consumer, which I believe will be one of the most rapidly accepted, is the dehydrated apple quarters or "nuggets." These compare very favorably with fresh apples for use in apple pie or apple sauce.

Carbohydrates, Vitamins and Minerals

Age imposes certain deprivations—appetite, digestion, absorption—so that, even when a reasonable diet is consumed, certain deficiencies result. This may well occur even when obesity is present. The mouth (including the tongue, lips and fauces) has become the nutritional barometer . . . gastric acidity slows up after 20, achlorhydria increases considerably after 40; by 65, 35 per cent of people do not secrete acid after a meal and 28 per cent show no response to histamine. Those losing their teeth (often without good reason, focal infection) frequently go through a period of adjustment when appetite slumps and subnutrition ensues. . . . The prophylaxis for their dilemma goes back two to five decades. Is diet at fault? Weston Price thinks so. All nutritionists should read his book. He has gathered information from all around the world. The illustrations alone would seem to prove his thesis: native peoples (on the most varied source foods), when they get a balanced food and avoid over-refinement of flours and sugar excesses, bear children with properly formed jaws; the teeth are regularly spaced and both gums and teeth survive . . . doctors have taken the vitamin detour to supposed nutritional sufficiency and are using various vitamin compounds as they would "bitter tonics." . . . Among segregated groups of the elderly there is a place for evaluating the benefit of certain selected vitamins, food enforcement with scientific controls. I have found many situations and reported on a few in which such utilization in the old induced a health transformation. . . .

Among the elderly, senile osteoporosis frequently is found. . . . By whatever method we try to recalcify such bones, the results are discouraging. I stress this to question the use of milk as a source of calcium for old people. They do not need the fat in whole milk; skim milk is constipating if taken in large amounts and bulky foods promoting residues are left out. Cheese, buffered with vegetables, is more practical.—*Tuohy, E. L.: Handbook of Nutrition: XX. Feeding the Aged, J. A. M. A., 121: 42, 1943.*

Editorial

THE NATIONAL NUTRITION PROGRAM: POINTS OF EMPHASIS

Even though the obstacles cast in its way by the rapidly changing national food situation have impelled the National Nutrition Program to veer from its original course at several points, the compass remains steady and the final destination, by whatever route, is still clear. Those responsible for mapping out the course must, as navigators, see that the goal is not lost sight of.

In other words, the support of Americans everywhere must be enlisted (1) to hasten victory by keeping strong, healthy, and vigorous through intelligent sharing of the foods which are available even under the limitations of a wartime economy, and (2) to establish a broad foundation of adequate nutrition standards among all our people for years to come. This is the goal as originally established and recently reworded in the campaign book released by OWI and ODHWS, described in this JOURNAL for April.

At the present writing, several obvious points of departure for those engaged in promoting the program present themselves. First among these is the need for individual effort to increase the *actual production of food*. Victory Gardens, the campaign for which is described elsewhere in this JOURNAL, are important, of course. Dietitians in industrial plants especially have a fine opportunity to urge home gardens as one means of improving workers' diets. Individuals in other occupations and in non-industrial communities who cannot be year-round farmers or seasonal workers can help by volunteering as "emergency harvest workers." Volunteers are needed from towns and cities for week-ends, half-days, evenings, and vacation periods to see that a local crop is not lost for lack of labor. Here is the principal field for the High School Victory Corps, the Women's Land Army, the whole camping movement which this year will mingle help on nearby farms with summer camp programs, the out-to-the-farm hegiras of women's clubs and other civic groups. Last year Saidie Orr Dunbar marshalled clubwomen and other women in Oregon to work on the farms. (An eye witness said that some of the clubwomen did fall by the wayside after their photographs were taken, but the surprising thing was the number who stuck and turned out real work.) Community canning ventures, successful in many communities last year, should be expanded this year. Increasing the amount of home-canned foods will actually increase the rationed allowance of processed foods, according to official announcement of OWI.

Unusual foods which will compensate for scarce and rationed items must be continually stressed. For example, peanuts are coming out of the confection class to add a welcome note of plenty to the food supply picture. A two-ounce serving of raw shelled peanuts will furnish a fifth of the average adult's daily protein requirement, a sixth of his calories and phosphorus, a tenth of his iron, a sixteenth of his calcium, a third of his thiamin and an eighth of his riboflavin, we are told. In fact, peanut protagonists claim that if the southerners who grow peanuts would eat a handful of them a day they would stand in no danger of getting the South's dread disease, pellagra. Emphasis on expanding peanut acreage is being continued by the Department of Agriculture. Peanut oil is one of the most versatile of edible oils; it makes a good shortening and cooking fat, goes into the making of salad oils and margarine.

Public health and sanitation needs should not be overlooked, as these are certainly part of the job of keeping Americans strong. A letter from a physician on the West Coast, quoted in February *Public Health Nursing*, states that, "In some areas, sanitation of public eating places has broken down . . . rat population has even outstripped human population increases . . . immunization is being neglected . . . many thousands are living in trailers, some trailers accommodating as many as eight people without adequate water and sewage facilities." This letter is said to be typical of reliable reports from communities "blitzed" by in-moving masses of defense workers, their families, and the families of men in the armed services. Incidentally, in regard to the last-mentioned, OWI has asked that women who are thinking of following their husbands to camp be warned through the pages of women's magazines that they will be greatly complicating the problems of communities already short of health, housing, and

transportation facilities and that conditions for themselves and their children will be dangerous and demoralizing.

Information on how the labor shortage problem can be solved is always welcome to those managing food services. The use of handicapped persons in certain types of work is one suggestion. Finding jobs for handicapped persons is one of the functions of the U. S. Employment Service, which operates under the War Manpower Commission, and to which application should be made when help is needed.

Educating the public to the need for sharing food with our Allies and feeding the liberated countries, as suggested editorially in this JOURNAL for April, is important to the success of the rationing program. Under the head of education also comes the spreading of information about food conservation. There are several recent publications, easily obtainable, which contain information about conserving food and food values, among them:

Vitamins From Farm to You. USDA Food for Freedom Series.
Home Canning of Fruits, Vegetables and Meats. USDA Farmers' Bulletin 1762.
Drying Foods for Victory Meals. USDA Farmers' Bulletin 1918.
Homemade Pickles and Relishes. USDA.
Food Preservation. Kansas State College, Manhattan.
Making Ferment Pickles. USDA Farmers' Bulletin 1438.
Fight Food Wastes in the Home. USDA Food for Freedom Series.

The primary concern of the new Nutrition in Industry Section of ODHWS, described elsewhere in this JOURNAL, is the promoting of proper eating conditions and the serving of nutritious foods within the industrial plant, and obtaining the active cooperation of management and labor groups in the promotion of better eating habits among workers. The program specifically calls for the services of a trained dietitian in each plant. A series of pamphlets being prepared by the Nutrition in Industry Section should prove valuable. The first of these, a series of master menus for various types of industrial feeding establishments, was scheduled for publication in February. Others will cover recommendations on equipment, mass preparation and service of foods, tables of food values and losses incurred by the usual methods of storage and mass preparation, types of nutrition education programs which can be instigated by plant management, particular food needs of workers in certain industries where they are subject to unusual physiological stress or to contact with toxic substances, and making the best use of available food under rationing.

WASTE NOT

Editorially in the February JOURNAL and again in April, stress was laid on the critical need for food conservation. The Nutrition Program, it was remarked, "may soon be overshadowed by the Food Conservation Program." This was not an attempt at blind prophecy, for as surely as spring follows winter, food shortages follow war's devastating sweep of events.

As was stated on page 306 of the April JOURNAL, a Nutrition and Food Conservation Branch now supersedes the former Nutrition Division of the ODHWS and a broad food conservation program is to be launched. The need for food conservation should arouse every member of the American Dietetic Association to even greater efforts and it should not be forgotten that it was the same need that gave birth to our national Association in 1917.

Perhaps no dietitian needs to be reminded that avoidance of waste begins with careful marketing, continues with proper storage and preparation, and service of enough but not too much food, and ends with an empty plate and the food inside the man. The skills which will effect all this are based on a composite of the arts and the sciences, the one being ineffectual without the other. In fact, the immediate future presents a golden opportunity to place applied nutritional science—dietetics or the art and science of feeding people—at least temporarily on the pedestal so long occupied by the goddess of theory.

There are many practical approaches to the problem of meeting food shortages through elimination of waste. Waste in cooking implies more than that which can be observed in the garbage can. Potatoes boiled in their skins, for instance, should be routine procedure, for we shall have need perhaps for twenty to fifty per cent more than in 1942, while present prospects indicate only a five per cent increase in production over 1942. "Hollow hunger" is favored by gross waste of food; "hidden hunger" by losses the causes of which are discernible only to the trained eye. The practical answer to the second is to serve as much food in the raw state as is possible, plus attention to all the factors which influence loss of hidden nutrients.

It is known that vitamin A can be stored in the body for as much as six months. Now is the season to begin storing up for next winter by eating all the green leafy vegetables possible and preserving others by suitable means for future use. Only by bending every effort to produce, conserve, and extend food supplies can we hope to carry on unhandicapped.

"FOOD TO FLY ON"

Little by little it is beginning to be evident to all nutritionists that it can be a far cry from the test tube to the dining table. Little by little it is being demonstrated that nutritional research and nutritional knowledge, paper dietetics if you will, must be teamed with practical dietetics. Or to reword slightly an aphorism of Ruth Wheeler, "It's what

goes into the man that counts." The dietitian must be the liaison officer between the science of nutrition and its effective application. All this has been put into popular language in the first attempt, shall we say, to "glamourize" the dietitian and her job. In the March 20 *Collier's*, Hannah Lees writes on "Food To Fly On." She says: "It's not the food you plan, it's the food you eat that counts. The RCAF found that out. Now its messes are the best in the world—thanks to female flying officers who aren't content to stay out of the kitchen."

And then follows a pithy line or two which will be read with perhaps a smile mixed with rueful recollections by Army dietitians who served in 1917–18 and those who serve today—"The men were forming in line, the kitchen help were dishing it out when a trim little girl in Air Force blue and the stripe of a section officer stepped up to the pot and tasted the beans. The cook and the sergeant-cook were right behind her. She looked at them and shook her head. 'They aren't cooked enough, Sergeant. Better give them the cold meat we were going to have tomorrow and recook the beans,' she said. The sergeant saluted respectfully, to the surprise of nobody, including the girl in Air Force blue, and the order was carried out."

Miss Lees continues: "It started back in 1939 shortly after Canada got into the war. The Department of Defense, realizing that a lot of men were going to have to be properly fed so that they could fight, got out the old army ration from the last war, dusted it off, and took a look at it. It didn't look so good.... The Department of Defense very intelligently got together a committee not of soldiers but of nutrition experts, and this committee devised a new standard ration. It looked marvelous on paper. Calories, minerals and vitamins were all nicely balanced one against the other. The authorities sighed with relief, put it into effect, and turned their minds to the important job of fighting the war."

When the nutrition-minded medical officers went around to a few air stations to look at this carefully balanced ration, it didn't look very different from the old army ration. In quite a few of the air stations, the cabbage was gray, the meat was gray, the potatoes were gray. In some, the spinach and peas and tomatoes were brown. When they talked to the cooks, the reply was "We've always cooked it this way," or "We have to cook it ahead or it won't be ready when the men come in and they'll be sore." After testing some of this food and finding that as much as 85 per cent of the vitamins had been lost or destroyed, they decided that the trouble was in the kitchen and that the people to fix it were kitchen experts, in other words, women. A dietitian who was running the restaurants in one of the biggest department stores in Canada was accordingly picked and offered the position of chief dietitian with the commission of flight officer. Later seven more dietitians were added, heading messes in the six commands into which the RCAF is divided, and the RCAF cooking school. The RCAF then had eight new-type messing officers, loaned by the biggest hotels, hospitals and industrial organizations in Canada for the duration. Today there are seventy more in charge of Air Force kitchens in Canada, and the RCAF is on the lookout for some twenty or thirty others. There are women cooks in many of the RCAF kitchens and women kitchen helpers. Each kitchen still keeps a sergeant-cook to see that the orders are carried out, but the dietitian gives the orders. Each kitchen still keeps about a third men workers for the heavy work such as lifting, butchering and some baking. The dietitian plans the menus from the standard ration, supervises the preparation and serving of food, and tastes and passes on every dish before it is served to the men.

"It hasn't, of course, been as simple as it sounds," reports Miss Lees. "Women officers in the kitchen, talking about waste and spoilage and cooking times and temperatures, women telling experienced sergeant-cooks what to do—that was a nuisance and an outrage. But they needed telling and they were told. The medical officers were given a brief refresher course in nutrition and the nutrition aims of the RCAF, and were reminded that their first job was to *keep* the men well, and part of this job was backing up the dietitian in her projects."

Here is an interesting sidelight: "One of the little ironies of this whole happy revolution is that the setup has made no provision for the officers' mess, which has always been separate.... But now, many of the officers are complaining that the men get better food than they, and are coercing the poor messing officer into supervising their kitchens in her spare time and planning their meals along with those of the men. And since the dietitians, as officers, have to eat what the officers' mess provides, they are usually not hard to coerce."

To persuade the fliers to eat the right foods, even though they may not have been accustomed to doing so, the RCAF has produced a movie and printed a booklet telling the story of what an airman needs for absolute top health and how these foods produce top health and why. Miss Lees concludes her article with the following observation: "If with this intelligent propaganda, plus the perfected RCAF ration which went into effect last June, plus the highly trained women messing officers, plus the nutrition laboratories, the RCAF boys don't continue to be the best-fed service in the British Empire, it will only be because some other service has taken a good look and started a bigger and better revolution in its own messing department."

THE ARMY NEEDS DIETITIANS

Mary W. Northrop, Chief Dietitian, King County Hospital System, and member of the Committee on War Activities, American Dietetic Association, sends the following message to dietitians not yet in the Army:

We asked for military status as commissioned officers and thanks to the support of the War Department, this has been granted. Now it is our turn to supply what the Surgeon General asks—a corps of dietitians adequate for the large Army that is being built. There were those who appeared to feel that the mere fact that commissions had been granted would automatically, in some magical way, provide a large increase in the supply of Army dietitians.

The immediate result has been the opposite, because some of the dietitians already in the Army did not feel free to accept a "duration and six months" enlistment, while others discovered on presenting themselves for physical examination that they could not meet the requirements. The result is that the Army still lacks dietitians and needs them as soon as possible.

If you think you may be able to qualify for service, read to the end of this article and then write immediately to the Office of the Surgeon General, Washington, D. C., for application blanks. If you are training dietitians, be sure to present to your students the fact that Army service is a primary professional and patriotic obligation for those who are free and can qualify. (Incidentally, it need not be considered a duty with a dark-brown after-taste, for most young dietitians thoroughly enjoy Army service.) Directors of approved hospital courses for student dietitians should meet with their senior students two or three months before graduation, determine which of them are interested in Army service, and send the list to Major Helen C. Burns, Office of the Surgeon General.

Some dietitians can't go; their share in winning this war must be the humdrum, doing-two-people's-work-at-home sort of job. Those who decide that they want to take advantage of this opportunity to serve need only check over the following list in order to determine definitely whether or not they can and will enlist:

Requirements for Army Dietitians.

a. Education—A degree with a major in Foods and Nutrition or Institution Management from a college of recognized standing.

b. Experience—Completion of a course for dietitians approved by the Surgeon General. Two years of experience in a hospital approved by the Surgeon General may be substituted for the training course, provided the experience includes (1) Diet Therapy; (2) Planning Adequate Menus; (3) Supervision of Employees in Food Preparation and Service; (4) Ordering Food Supplies and Equipment; and (5) Food Cost Control; and provided that one year of this experience is within the last ten years.

c. Physical Status—A physical examination should be completed at the nearest Army station having adequate facilities for completing a final examination with a view to determining physical fitness for military duty. A letter of authority will be provided by the Surgeon General.

d. Age—The applicant must not have passed her forty-fifth birthday.

Method of Application. A request for application blanks should be sent to the Surgeon General, War Department, Washington, D. C. (It is as simple as that!)

Rank. The dietitian in the Medical Department of the Army will receive the relative rank of 2nd lieutenant.

Salary. The salary is $1,800 per annum plus a monthly quarters allowance of $45 and subsistence allowance of $21.

Assignment. The dietitian is expected to accept assignment wherever needed, either in the United States or overseas.

Appointment. Appointments will be made by the Surgeon General.

Length of Enlistment. Enlistment and appointment are for the period of the present war and six months thereafter.

Uniforms. Both hospital and street uniforms are to be worn. These will be articles of issue.

Personal Belongings. Since luggage should be limited to a standard foot locker and one suitcase not too heavy for the owner herself to carry, and since Army clothing must also be packed in this space, careful planning is indicated to reduce the number of personal belongings taken to an Army assignment.

Current Comment

FORMULA ROOM MANAGEMENT

In order to give as complete a picture as possible of present practice in regard to methods of preparing infant formulas, the article in this issue entitled "A Simplified Method of Preparing Infant Formulas" is supplemented by the following summary of current procedures and suggestions presented at a round table discussion at the meeting of the American Dietetic Association, Detroit, October 20, 1942, at which Nell Clausen, Milwaukee Children's Hospital, presided. Previous to the meeting a survey of 18 hospitals, employing an average of 9 dietitians, indicated that the number of dietitians

on pediatric service at one time ranged between one and 14. In two hospitals where trained employees prepared the formulas, student nurses received 3 hours of laboratory training in formula preparation.

Supervision of Formula Room. The consensus of those who took part in the round table discussion was that the formula room should be under the supervision of the dietary department. The survey had shown this to be equally divided between the departments of dietetics and nursing. Formula rooms now under supervision of the dietary department include those of the Babies Hospital, New York (see aforementioned article in this JOURNAL); Beth El Hospital, Brooklyn; St. Mary's Hospital, Rochester, Minnesota; and Swedish Hospital, Seattle. At the last-named hospital the formula room had been under the complete control of the nursing department until a year previous, and it was reported that the change had proved to be warranted. At the request of the superintendent of nurses at Beth El Hospital, the dietitians there assumed responsibility for the formula room and the training of student nurses in formula preparation, three years ago. The obstetric department in this hospital is responsible for the feeding of infants up to two weeks of age. At St. Mary's Hospital, two student nurses are sent to the formula room for training, approximately every two weeks.

Milwaukee Children's Hospital has no nursery department, but the formulas for sick infants are under the dietary department up to a certain point. The actual preparation, however, is under the nursing department. The dietary department gives lectures to the student nurses, prepares all food other than formulas for infants, and has charge of all special diets for babies. This combined supervision was said to be satisfactory.

At Fairmont General Hospital, California, where the formula room is on the fifth floor and the kitchen in the basement, it was thought that it might be difficult for the dietary department to take charge, especially since only two dietitians are employed.

At Milwaukee Children's Hospital, student nurses assigned to the milk laboratory attend to all the feeding of infants, each worker in the laboratory being assigned a definite number of formulas and feedings. This affords an opportunity for case studies as the nurse who prepares the feeding follows through and notes results.

At the University of Michigan Hospital the nurses prepare the formulas (about thirty-five each day) while at work in the laboratory during the morning. When they report back at night they go to the nursery to read histories under the supervision of the nurse in charge in order to find out why certain therapeutic formulas are used.

The above-mentioned survey showed that the length of time devoted to the training of the student dietitian in making formulas averaged about three and one-half weeks, while student nurses had an average of less than two weeks of training. In 5 of the 18 hospitals covered in the survey, student nurses combined formula room experience with service in the nursery.

Some Procedures Now in Use. In regard to the washing of babies' bottles, an electric bottle-washer, made by the engineer at Milwaukee County Hospital and now in use there, was described. It consists of a brush turned by a motor, the bottle containing soapy water being slid under the revolving brush. Each bottle is handled individually. At Milwaukee Children's Hospital, bottles used in the daytime are washed by a maid, and those at night, by student nurses. A brush and green soap are used. When the formulas are made up, the nipples are put on the bottle and covered. Formerly waxed paper was used, fastened with a rubber band, but since rubber bands are no longer generally available, a paper cap is being used, which is not so satisfactory. St. Mary's Hospital uses both glass and aluminum caps, preferring the latter because of less breakage.

At Cook County Hospital, Chicago, 50 premature infants on an average are fed raw breast milk, unsterilized. In sterilizing equipment at Milwaukee Children's Hospital, the procedure is to boil 45 minutes under 18 lb. pressure. The University of Michigan Hospital boils equipment 60 minutes. At Milwaukee County Hospital most of the equipment is sent to the operating room for sterilization. At Cook County Hospital samples of one formula and of a bottled feeding are examined once a month for bacterial count, and the report is sent to the chief of the medical staff.

Teaching Formula Preparation. At Milwaukee Children's Hospital, 6 student nurses at a time are instructed in the milk laboratory. When the dietitian plans the weekly menus for the hospital she also makes a week's schedule for the milk laboratory for infants on three meals a day. The menus are based on the general diet for children. The food is prepared in the main kitchen and sent to the milk laboratory to be served by the students assigned to this unit. At Beth El Hospital one lecture is given to the nurses on home preparation of formulas, at which time they are given mimeographed instruction sheets. Student nurses are required to give two demonstrations to parents as part of their training.

The survey indicated that only 4 of 18 hospitals permit student nurses to instruct parents in formula preparation. A small hospital in the West was mentioned in which the mother is taught how to bathe the child and prepare the formula under conditions corresponding to those in the average home. The group was in agreement that more training should be given to student nurses in the preparation

of formulas and the handling of equipment suitable for use in the home, and that better instruction should be given to mothers concerning formula preparation.

HOSPITAL FOOD SERVICE IN CHILE

MARGARET SHATSWELL PRICE

There are at least two Chilean physicians who deplore the lack of competent foods personnel in the hospitals of their country. One of them complains also of the situation in Chilean private homes. We suspect he may be thinking in personal terms when he writes, "Even in the home of a professor of nutrition the feeding problem is delegated to a cook who hardly knows the alphabet. In hospitals the cooks are likely to be still more ignorant."

This quotation is from Dr. Esteban Kemény's article, "The Importance of Culinary Technique," appearing in the *Revista de Medicina y Alimentación* (Santiago de Chile) for October 1941–January 1942. The other physician is Dr. Julio Santa Maria. Writing on "Dietary Regimens" in the same issue, Dr. Santa Maria tells of hospital kitchens lacking in equipment, manned by unskilled personnel, and understaffed in addition. While Drs. Kemény and Santa Maria agree that much is wrong, they approach the solution from two points of view.

Dr. Kemény has some thoughts on cooking as a technique, and discusses the reasons why this skill has lagged in prestige and progress while even "a seamstress commands more respect in her employment than a cook." One cause is the lingering of the more primitive type of apprenticeship after it has been supplanted in other trades by newer systems of teaching. The hand rather than the brain has been trained, and endurance rather than intelligence has been the requisite for the long hard way. Moreover, there has never been a universal idiom among cooks. The French vocabulary offers the most exact, but unfortunately also the most fantastic terms, and while it is almost an international standard for the chef, it falls far short of being a dependable scientific idiom.

Dr. Kemény draws an interesting contrast between "method" in cooking, which does not change, and "style," which varies from time to time and from region to region. Style appeals to our aesthetic sense, while method belongs with physical needs. Style and method are interdependent in our modern world, and are worth studying. A further division is made between the sensations of sight and touch and the sensations of hearing and tasting. Dr. Kemény calls the former "concentrated" and the latter "diffused." Not only sensation, but also habit and personal idiosyncrasy must be taken into account in foods work, and in the feeding of children it is extremely important to educate the child in good food habits which will sustain him in later life.

But a physician, who understands these things, cannot personally attend to individual patients. He needs a dietitian, and it is evident that dietitians are scarce in Chile. Only with dietitians and trained cooks in the hospital diet kitchen, Dr. Kemény affirms, is there any hope of attaining "that distant objective"—a dietary program quantitatively correct, yet appealing to the appetite, which must be the basis for good diet therapy.

Dr. Santa Maria, also realizing the inadequacy of hospital food service, has some suggestions for improving the diet situation while accepting the existing conditions.

Stating that he is guided by North American methods, he begins by recommending a classification of diets. He thinks it is quite possible to offer a varied choice of dishes from which the physician may select what his patients need without upsetting the kitchen or imposing a monotonous diet. Dr. Santa Maria regrets that "We cannot yet ask this of our hospitals because so-called decentralized kitchens are required; we do not have the equipment or the personnel." However, he has worked out some general rules which will permit a simple modification of the house diet to suit the particular need of each patient. Diets are classified according to consistency, preparation, quantity, quality and distribution (time and temperature). The diets are then subdivided into the bland, liquid, residue, dry types, with modifications in preparation and other characteristics according to the requirements of the patient.

In examining the list of foods recommended, it is interesting to observe that Dr. Santa Maria includes few that are strange to the North American. Amusingly enough, oatmeal is called "quáker." Most of Dr. Santa Maria's article is devoted to concrete suggestions in outline form for modification of hospital diets. His first section deals with modifications for consistency, with the subheadings (1) liquid, (2) bland, (3) residue, dry diets. He offers a list of permissible types of food familiar to dietitians.

Section II is entitled "Modifications in Preparation." Dr. Santa Maria emphasizes the importance to the physician of some knowledge of food preparation. If he has none, he must give a vague answer to the patient's anxious relative who asks, "What light dishes can we give him, Doctor?" He is apt to reply, "Don't season heavily, make it light—rice, a few greens cooked in oil, some little dessert—perhaps some coffee. . . ." Just as he gives the druggist a prescription with a very good knowledge of its contents, so he should be able to order his patient's diet with a definite idea as to how it can be carried out. Unfortunately, hospital patients are so accustomed to a perfectly monotonous diet, that they have been known to complain of neglect if their egg

appears in the form of a custard. Milk in its natural form, by the way, is apparently not a popular food for adults in Chile.

Of the light diet, Dr. Santa Maria says, "It is difficult to define its characteristics, since digestibility involves personal idiosyncrasies . . . but one necessary factor would be 'simplicity.' We do not believe in the fad diets which condemn the combining of protein and carbohydrates in the same meal."

In discussing salt-free and dry diets, Dr. Santa Maria suggests that appetizing odor, "hot" seasoning, and sweets help to break monotony. Hospital diets which revolve around potatoes, rice and noodles with a bit of tasteless salt-wort in water encourage cheating on the part of the patient. "It will be possible to change this situation only when we can depend on the help of dietitians (or at least better cooks) and when hospital boards consider marmalade, sweets, and desserts as important as diuretics."

Under "Concentrated and Dilute Diets," it is pointed out that the same foods may be easily modified to serve in both types of diet. "A concentrated broth with eggs and milk given to a tuberculous patient with anorexia becomes, for an overweight diabetic, a bowl of soup, a glass of milk, a fried egg. The use of such modifications in the volume of the menu allows for much individual elasticity."

Modifications in quantity is the subject of the third section. Here Dr. Santa Maria reminds his readers that what may be a high-caloric diet for one patient may be too low for another. This necessitates individual calculations. Therefore a general system has been set up "which . . . attempts to supplement the hospital ration with elements in which it is certainly deficient: extra milk, beef-steak or some other muscle meat or organs, cheese, butter, eggs, fruits and salads." In reducing diets, the high-calorie portion would be reduced and compensated for by the inclusion of fruits, salads, and the like.

Weighed diets are a special problem. The required accuracy is difficult to achieve, and there is a need for standard tables. Weighed diets are possible "only in a well-equipped diet kitchen having standardized methods of preparation. Without the minimum requirements, which include scales in good condition and employees who know how to use them, any hospital diet is a farce."

Qualitative modifications (Section IV) concern the selection of food. Dr. Santa Maria classifies the foods to be offered for different types of diets in tables which are based on the customs and facilities of the hospitals. He regrets that nothing can be done about "foods which stimulate or depress digestive secretions, stimulate or inhibit vascular contraction, influence circulation and nervous tone, affect endocrine balance, cause allergy—an important field of research and practical application only possible with a more advanced state of organization in the food service of our hospitals." He deplores the fact that "fruits and vegetables are still considered luxury foods in hospitals."

Dr. Santa Maria concludes his article with a plea for the employment of dietitians, and for a more generous budget for hospital food service. With the cooperation of such enlightened and articulate professional men as Drs. Santa Maria and Kemény, it is to be expected, to quote again, that "the interest of physicians will certainly bring about the natural and necessary development of dietetics" in our good neighbor, Chile.

Nutrition and the War

KEEPING POSTED ON NUTRITION PROGRAM MATERIAL

An attempt has been made to cover through the pages of each JOURNAL the wealth of material devised for use in the National Nutrition Program, received from federal and state, local and private agencies, and individuals. Comment concerning such items appears as soon as possible after their receipt, either in this section, the news section, or as fillers. Those from commercial sources usually appear under the heading, "News From Our Advertisers and Exhibitors" in the news section.

Among the printed materials received in March is a series of pamphlets dealing with the maintenance of an adequate diet through the use of rationed and non-rationed foods, published by the Office of War Nutrition Services, State War Council, Albany, New York. The pamphlets are illustrated by comic sketches and bear the following titles: "Substitutes for Butter"; "Vegetables Fill the Bill"; "Protein Is Important"; "Breads and Cereals—Plentiful and Inexpensive"; "It Takes Both Kinds [milk tanks and armoured tanks] to Win the War"; and "Fruits and Your Wartime Diet." The theme of the series, "You Can Be Well Fed on Rationed Food," is printed on each. In the first pamphlet, on butter substitutes, the need for fat in the body is stated, then the manner in which butter differs from other fats, followed by lists of spreads and cooking fats to use in place of butter. Especially valuable is a list of vegetables and other foods which should be eaten in order to obtain sufficient vitamin A when butter and margarine are scarce. How to save fats from meats is also described. All of this material is contained in a folder which, when opened out, is the size of a letterhead. The other pamphlets are equally compact and filled with sound, useful information.[1]

[1] The Office of War Nutrition Service, 10 S. Pearl Street, Albany, will supply single copies of the above-described pamphlets to out-of-state persons or agencies and will grant permission for reprinting them, providing no change is made in the material unless first approved by that office. Requests should be addressed to Dr. Alvin A. Florin.

Two pamphlets addressed to war workers, now in preliminary form, have been received from the same source, explaining in short, terse sentences, and with the aid of cartoons, what the war worker should eat for breakfast (breakfast being "the first meal whether on day, swing or night shift") and for lunch. Between-meal snacks are presented as necessary adjuncts to these meals. These are the best pamphlets of this kind that have come to our attention. They are specific, amusing without being "kittenish," and have excellent propaganda value which should appeal especially to men. A third, on packing lunches, is in preparation. For further information on the topics covered in the pamphlets, readers are referred to their local War Council nutrition committees.

Other materials from the New York State War Council which deserve special mention are: (1) Two lessons on meat and meat substitutes, including recipes, in leaflet form, prepared by Lillian Shaben and Jeanette McCay, New York State College of Home Economics, for community and neighborhood classes conducted by local nutrition committees. Other lessons are in preparation. (2) Weekly market order for a family of four, with the cost figured in dollars and in points. Menus and recipes are included. These are being prepared regularly. Accompanying the order is a "Shopper's Guide to Better Buying Under Rationing," a printed form showing the amounts of each class of foods needed by a family of four, and providing spaces in which to record the items to be purchased each day and the point values if any. A grocery list is appended which can be detached after it has been filled in. Since every housewife these days must figure her marketing needs on paper if she is to make her points "last," this is an especially handy device. The War Council releases a mimeographed statement weekly to the newspapers regarding the food situation and a modified market order, together with menus. (3) A bulletin entitled "Eat Fish—Fish Feed Themselves," prepared in cooperation with the New York State Department of Conservation. It is expected that this just-mentioned bulletin will be printed in large quantities and will be available for outside distribution.

Another recent contribution, entitled "Relative Contribution of Protein-Rich Foods," is a highly useful chart compiled by Dr. Margaret L. Fincke, Oregon State College, and published jointly by the Oregon Nutrition Council and the Oregon State Board of Health. Unlike some others prepared for a similar purpose, this chart is easy to read. The proportion of the day's allowance (for a moderately active man) of calories, protein, calcium, iron, thiamin, niacin, and riboflavin furnished by specified amounts of fifteen protein-rich foods is shown by means of colored segments of circles. Thus, one may compare at a glance the relative iron, niacin, and riboflavin values, for example, of 3 oz. lean chicken, 3 oz. lean beef, and 1 cup cooked soybeans. Copies of the chart, which measures only 8½ by 11 inches, may be obtained in quantity lots from Mrs. Laura P. Wells, Oregon State Board of Health, Portland, at $1.25 per 100.

As new posters and moving pictures having to do with the war effort come to our attention we have listed these either in this or the news section. The latest list of posters, available free from the Division of Public Inquiries, OWI, Washington, includes: "Guard Your Family's Health"; "Plant a Victory Garden"; "Where Our Men Are Fighting, Our Food Is Fighting"; "Do With Less So They'll Have Enough"; "Use It Up, Wear It Out, Make It Do"; and "Battle Begins With Your Job." A new booklet has been published, available from the Bureau of Motion Pictures, OWI, Washington, entitled "War Films for War Use." The booklet describes the availability, accessibility, and uses of 38 war information films, several of which have been mentioned in this JOURNAL. Specific suggestions are given for the use of films in schools, churches, clubs, factories, etc. Incidentally, the OWI official weekly publication, *Victory Bulletin*, is probably the best single source of information on new posters and films.

The revised Official Food Chart for the National Nutrition Program, mentioned on page 314 of this JOURNAL for April, probably will have been released by the time this JOURNAL is published. The seven food groups are arranged in a circle around a central "U. S. Needs US Strong" inset. It is understood that glossy prints of the chart and the enlarged inset will be available for reproduction from the Nutrition and Food Conservation Branch of the Food Distribution Agency, which supersedes the ODHWS, Federal Security Agency. A pamphlet listing the foods in each food group and suggesting alternates for scarce foods will also be available from the same source.

A METHOD FOR COLLECTING FOOD PRICES

An account of the revised method used by the Community Nutrition Section of the Philadelphia Dietetic Association for collecting food prices has been received from Mrs. Martha A. Hunscher, chairman. The method was adapted from that used by the New York Budget Council, Social Welfare and Public Health Department, New York City Home Economics Association. The work was carried through to such a useful conclusion that it merits reporting in more or less detail here.

The prices were collected at the request of the social agencies in the vicinity which had been adjusting grants to their clients because of rising costs. Mrs. Hunscher reports that, in addition, the data have been of great assistance to those interpreting the adequate normal and therapeutic dietaries to clients and patients and have therefore met a real need in Philadelphia.

In order to give those who were to collect food prices an idea of the details involved in arriving at the average food prices in the city at a given time, instructions were mimeographed and distributed with the forms to be used. The instructions gave, first, the demarcations of the five areas into which the city was divided for the purposes of collecting the data, the number of areas having been determined on the basis of the relief population in the various districts of the Department of Public Assistance and the case load of the social agencies. Persons collecting food prices were instructed to get these from any stores in their respective areas, including chain stores, cooperatives, independent and association stores, city and street markets, food and vegetable markets, dairies, general grocery stores, push-cart markets, and fruit and vegetable stores.

Mimeographed price collection sheets were used, on which foods were listed under the general headings: dairy products, vegetables, fruits, fats, breads and cereals, meats, fish, and miscellaneous. Space was provided opposite each food in which the price per specified unit of weight or measure was to be inserted. The instructions explained what grades of food were to be priced; for example, Grade C canned goods, Grade B eggs and milk, etc., also, the sizes of eggs, oranges, and apples, and the kinds of packages to be considered. Prices on root vegetables were to be calculated by the pound, and only those vegetables and fruits which were in season were to be priced. Sale prices were to be ignored, and collectors were instructed to get a sufficient number of prices on each item so that a fair price for each food could be determined—"fair price" being defined as "that which the average housewife in the neighborhood can secure by doing a reasonable amount of shopping around." A separate price collection sheet was used for each type of store visited (chain, independent, etc.). If the same price was found in several different stores, this was indicated.

Prices were collected February 2–5, 1943, from which a list of average prices of the various foods was compiled. The cost per specific unit (quart, dozen, pound) of each food was given, and the number of pricings from which the average had been computed. Practical application of the average prices thus obtained was then made by means of the "Market List for Low-Cost Meals," prepared by the U. S. Department of Home Economics. The minimum adequate diet costs per week for individual family members, classified by age and sex, were figured. The market list, with the diet costs added, was then mimeographed and clipped to the list of average food prices, making a highly useful and practical tool.[1]

[1] The market list and list of food prices are available from Mrs. Martha A. Hunscher, Pennsylvania Hospital, 8th and Spruce Streets, Philadelphia, at 5 cents a set.

It is interesting to note that the discussions with the social agencies of the undertaking described above led to the formation of a committee to compile data on minimum adequate budgets, which is functioning under the auspices of the Council of Social Agencies and on which the Community Nutrition Section of the Philadelphia Dietetic Association is represented.

VICTORY GARDENS CAMPAIGN

Numerous national organizations, including the American Dietetic Association, have been asked by Hal W. Hazelrigg, Chief, National Organizations Section, OCD, to bring to the attention of their members the problem of mobilizing farm resources in local communities, particularly through the farm labor recruitment and Victory Garden projects. Members are asked to work with the local Defense Councils, which are cooperating through their agricultural committees with county agents of the Extension Service and local offices of the U. S. Employment Service.

Some of the activities of organizations in Britain are cited as examples of the accomplishments which are possible through group effort. England is now producing two-thirds of her food whereas before the war she grew only one-third. No small part of this accomplishment is due to the participation of organized groups. They developed thousands of backyard pig, rabbit and poultry clubs, utilizing kitchen wastes as feed. They arranged picnics for the purpose of picking berries to be sold to local preserving centers. Children's groups sponsored herb-gathering parties which increased considerably the medical supplies of the country. The Women's Land Army, with 50,000 full-time members and hundreds of thousands of part-time workers, undertook all sorts of agricultural work. Hundreds of holiday harvest camps were established for those school children and adults willing to work during their vacations. The Women's Institutes, with over 5500 branches in rural areas, opened more than 5000 centers for preserving fruit. All this was done in spite of bombing raids and the withdrawal of workers to the armed forces and war industries.

American organizations, too, have played a major part in the fight for increased food production. Last year under such designations as Larcs (Land Army Recruiting Corps), Farm Cadet Victory Corps, Farm Youth Labor Committees, Volunteer Land Corps, and Harvest Helpers, national associations recruited and trained volunteers to work on farms. Plans have been completed for the coming year for the Victory Farm Volunteers, who are the farm laborers of the High School Victory Corps. At the suggestion of civic and service organizations, mayors have named Farm Harvest Days during which all stores,

schools and offices, except war plants, will close down so that the townspeople can help harvest crops. Business firms and farm machinery corporations have trained farm women and girls as tractor and farm machinery operators. Employers in many cases have arranged for their employees to spend their vacations on farms. Boy and Girl Scouts, Camp Fire groups, Y.M.C.A.'s, and private camp directors have planned to conduct tent camps, taking over school campuses in farm areas to house harvesters. Churches have organized work camps, trained leaders, and have undertaken the supervision of the young people at work on the farms. In addition, they have set up feeding centers and planned transportation to and from farms. Farm organizations have offered courses to teach volunteers the rudiments of specialized farm duties.

Along with the greater efforts to increase the production of food, will be increased emphasis on storing and preserving foods. It is in this field, perhaps, that members of this Association can be of most assistance, especially in communities where expert advice, except through the medium of printed bulletins, is unavailable. Canning and preserving will be done in connection with school lunch programs in some communities, we are told, using vegetables grown in school garden plots, and this might be one means of arousing the interest of parents of school children. Other canning projects are expected to be much more extensive than they were last year. It is urged, however, because of the shortage of canning equipment, materials, and sugar, that this method be limited to those garden products that cannot be preserved successfully by other methods. Storing, brining, drying, pickling, and freezing take less time and, with the exception of freezing, are less expensive. These methods should therefore be encouraged, especially by persons familiar with their advantages and drawbacks.

Literature distributed by the Department of Agriculture cautions against trying to can, dry or store fruits or vegetables which are not fully mature. Eyes and hands accustomed to judging these foods daily will certainly be valuable here.

Elaboration of the necessarily limited information given on the nutritive values of vegetables in the USDA bulletin, "Victory Gardens," would be welcome to those who are trying to decide between vegetables which are a fair source of several vitamins, an excellent source of one vitamin, a good source of one or two vitamins, or "others such as onions, beets which have great practical value in meals because of flavor and color even though they are not important for good nutrition," and especially if the persons doing the choosing "do not happen to like" collards, kale, and turnip greens—the only vegetables listed which are good or excellent sources of all the nutrients included in the table. The bulletin, incidentally, is fine so far as it goes and contains many helpful suggestions for prospective home gardeners and much sensible advice to those who may enthusiastically plan to undertake the impossible or impractical and to waste thereby both seed and fertilizer.

Other literature printed for the benefit of those interested in the Victory Gardens campaign includes a booklet called "Guides to Successful Employment of Non-Farm Youth in Wartime Agriculture." Physical and other requirements for youth recruited for farm work, preparation needed, and the duties and training of group leaders are described. In discussing the living conditions of young workers in camps, the statement is made that "A balanced diet adequate for young people doing heavy outdoor work is essential. Home demonstration agents, health department nutritionists, and home economics teachers can be helpful in planning meals." And, we might add, especially dietitians when available. This booklet also outlines the organization of the farm enlistment program. Other publications having to do with gardening which are available from USDA, Washington, are: "The City Home Garden"; "The Farm Garden"; "Diseases and Insects of Garden Vegetables"; "Disease-Resistant Varieties of Vegetables for the Home Garden"; "Hotbeds and Coldframes"; and "The Home Fruit Garden." A "Victory Garden Leader's Handbook" contains information about promoting the campaign as well as a garden diagram, some general information about gardening, and a list of common errors to be avoided.

Several 16-mm. sound films are available for use in the campaign, obtainable from the Motion Picture Service, OWI, Department of Agriculture; and the Film Division, British Information Service, 30 Rockefeller Plaza, New York. A film which tells the story of the need for vegetable gardens in every community has been produced under the direction of OCD by the publishers of *Better Homes and Gardens* and is available from J. S. Barlass, in care of that publication, Des Moines, Iowa.

INVALID DIETS AND FOOD RATIONING

Of interest to all who are concerned with diets for invalids is Ration Order 13, issued by OPA under date of February 9, 1943. This order covers all canned, dried, and frozen fruits and vegetables. Article II, Section 2.5 of the order reads as follows:

> Consumers who need more processed foods because of illness may apply for more points. (a) Any consumer whose health requires that he have more processed foods than he can get with War Ration Book Two, may apply for additional points. The application must be made on OPA Form R-315, by the consumer himself or by someone acting for him, and may be made in person or by mail. The applica-

tion can be made only to the board for the place where the consumer lives. He must submit with his application a written statement of a licensed or registered physician or surgeon, showing why he must have more processed foods, the amounts and types he needs during the next two months, and why he cannot use unrationed foods instead. (b) If the board finds that his health depends upon his getting more processed foods, and that he cannot use or cannot get unrationed foods, it shall issue to him one or more certificates for the number of points necessary to get the additional processed foods he needs during the next two months.

The application form referred to above, OPA Form R-315, is apt to be somewhat confusing to patients. It is titled "Sugar Special Purpose Application" and was developed primarily to meet the need for home canning. It is being used temporarily until a more adequate form can be developed.

It is anticipated that the procedure indicated in Section 2.5 above may be changed somewhat in the future, in which case due notice will be provided.

OUTDOOR EMERGENCY CANTEEN

A canteen unit to handle outdoor emergency cooking, in which Boy and Girl Scouts act as helpers, has been reported. The unit was organized by a group of women in St. Paul who had completed the Red Cross Canteen Course, in cooperation with Boy and Girl Scout leaders. According to this plan, which was tried out with very satisfactory results, the leaders supervised the laying out of the unit, building of fire pits, etc., while the young people, who had received instruction in canteen work, planned, prepared, cooked and served the meal, sorted food supplies, tended the fires, etc.

The work of the canteen was organized as follows: A "mess sergeant" (dietitian) was supervisor of the entire unit. Under her were the "kitchen orderly" and "dining room orderly." The kitchen staff consisted of a first cook; second cook; water detail, whose duties were to see that water containers were filled and to heat water for cooking and dishwashing; two assistants to prepare food for the cooks; a wood and fire detail, to build and extinguish fires and take charge of the garbage pit and dishwater drain; and a clean-up squad to wash kitchen utensils. Those on the dining room squad were assigned to one of the following: setting up serving arrangements, making sandwiches, cutting vegetables and fruits to be eaten raw, serving food, or cleaning up, including washing the dishes.

The diagram of the layout for the outdoor feeding unit includes: serving and preparation tables, fire pit with feeder pit at one end and a sheet metal top at the other to be used as a cooking surface over the fire; a woodpile at the windward side of fire; water buckets for the fire; and garbage and waste disposal holes located about 100 feet to the rear of the serving and preparation tables.

APPLIED NUTRITION IN INDUSTRY

FRANCES BERKELEY FLOORE[1]

Most of the cafeterias in industry are under the supervision of the industrial relations or the personnel department, and rightly so. Management of industrial relations programs serves as a balance wheel between man and machine. If all industrial plants would consider nutrition as an essential part of all industrial relations measures, we would be much nearer this important goal—a better nutritional level and better health for all workers in industry. Even though the material benefits of a functioning nutrition program cannot always be measured in dollars and cents, the intangible benefits will be evidenced by harmony and content among the workers.

Very often conscientious administrators will expend considerable funds for recreational facilities, bonuses, endowments and other means of improving the welfare of their employees; but not always do they realize the advantage to the employees' welfare of an attractive cafeteria where food is sold at reasonable prices.

Nutrition is always a very important part of preventive medicine and is especially important during this war period. The Army is taking over so many physicians that we must make every effort to prevent illnesses, especially those which may result from dietary indiscretions.

Our problem is to find some way to improve the diet of war workers as effectively and quickly as possible with these objects in view: (1) furnishing an adequate diet at the lowest price possible; (2) educating the workers to eat the foods on this diet; and (3) persuading as many as possible to patronize the cafeteria in order to improve their nutrition.

Many industrial cafeterias have met this problem by serving a low-priced plate lunch with a limited choice of foods. Where the plate lunch can be served in this manner it offers a splendid, practical means of teaching good nutrition and at the same time is of inestimable value in good-will relations. Because of the shortage of food and labor, many cafeterias cannot for the present prepare a variety of items to offer as choices.

For those who cannot offer choices, why not try feeding the factory workers as we feed the doctors, nurses, and patients in the hospital, in fact, just as they are fed at home? Let's give them a good meal, including a protein food, starchy food, green vegetable, bread and butter, beverage, and dessert. Such choices might be offered as: cheese *or* meat; salad, a green vegetable, *or* a juice; and for dessert, fruit, ice cream, *or* pie.

If you advertise your plate lunch from an economical as well as nutritional standpoint, you should

[1] Nutrition Adviser, Medical Department, Eastman Kodak Company, Rochester, N. Y.

HELP IN MAKING THE MOST OF THE MEAT YOU CAN BUY

MEAT-EXTENDING recipes and those for preparing "variety meats" are included in this timely new collection prepared by the Pet Milk Experimental Kitchens. Because the dishes contain Irradiated Pet Milk they are useful in putting high quality protein into the diet when the amount of meat has been reduced. At the same time, these dishes supply the other nutrients of whole milk plus extra vitamin D. Obviously the cost of this food is lower because of the use of Irradiated Pet Milk which costs less generally than ordinary milk. In many of these recipes Irradiated Pet Milk eliminates the use of eggs and also reduces the amount of shortening needed to produce an adequately rich flavor.

WARTIME-MEAT DISHES
by Mary Lee Taylor
These recipes have been tested and perfected to help you make the various kinds of meats you can buy go just as far as possible. Whether the dishes are meat-extenders or those using "variety meats", they are more nourishing because they contain Irradiated Pet Milk which has put into them the important substances of whole milk plus an extra amount of "sunshine" vitamin D. By using these recipes you can reduce the amount of meat you have been serving, at the same time supplying most wholesome and satisfying food and—above all else—contributing your part in making sure that our Armed Forces and our Allies have the meat they need.

Home Economics Department, PET MILK COMPANY
1450e Arcade Building, St. Louis, Missouri

Please send me free of charge one copy of "Wartime-Meat Dishes."

*Name*_____ *Address*_____

*City*_____ *State*_____

*Please give name of institution with which you are connected and your position*_____

(Fill in completely. Offer limited to residents of Continental U. S.)

soon be getting the "box lunch" customers and those who heretofore went to nearby stands to eat. Instead of only 40 or 50 per cent of the employees eating in the cafeterias, you will have 80 or 90 per cent.

Start out cautiously in planning the menu and include a few "come-ons," such as apple pie and ice cream. A good deal of the success of the menu will depend upon the ingenuity used in its planning. In any case, bear in mind the *selling* value of the food as well as its *nutritional* value. The food budget for a menu of this type will not be complicated. (It is assumed that the management will absorb a percentage of the cost since in most plants this is now being done.) Servings of food will be small, as a complete meal is being offered, with greater variety, than one ordered à la carte. Always have some less hearty cold plates at a similar price to appeal to women workers. And for those who prefer to make their own selections "at any cost," you might consider having an à la carte counter where portions are larger and prices higher.

You might offer only milk or "chocolate chill" (prepared with whole milk) for the beverage and have coffee and tea as extras. Of course, there will be many who will say they never drink milk or eat vegetables or salads. The answer to this is that before the war is over all of us may be eating many foods we haven't eaten before!

The question will be raised as to whether or not the office force should have a plate lunch. I think this group is looking for "bargains" in food just as much as the factory workers, and the standard-price lunch is a good bargain, economically-speaking, as well as an investment in health. Many of the office force, too, come to work without breakfast and need a good lunch to carry them through the day. Women, especially, are apt to make a meal on a sandwich and a soft drink or coffee in order to save for a manicure or a movie. They are inclined to favor rather queer combinations of food with the idea of keeping slim, and are apt to pay no attention whatever to their food requirements or body needs. Even though the investment returns for the plate lunch cannot be measured in dollars and cents, this type of meal should be of material aid in reducing the absentee rate and the incidence of injuries, and in raising the level of efficiency and morale and the general well-being of the employees.

FEEDING THE INDUSTRIAL WORKER AROUND THE CLOCK

IRMA REAVES

The problems of the dietitian engaged in feeding industrial workers are many and varied, especially so now that we are feeding around the clock. To give some idea of how rapidly our cafeteria has grown with respect to the number served, we are now feeding on a 7-day week basis, approximately 3000 people daily in one cafeteria of the Eastman Kodak Company as compared to 1200 in July 1942. Naturally, the consumption of all food supplies has increased accordingly in each cafeteria. For example, meat jumped from 75 to 100 lb. per day to 300 to 500 lb., depending on the menu. Our figures on the sale of milk are also interesting. We are, of course, stressing its use for good nutrition and urging that it be included in between-meal feedings. If we serve 2000 people, we also sell 2000 bottles of milk, including pints and half pints, in addition to the coffee and tea always demanded by some. A short time ago we were selling less than 1000 bottles of milk to the same number. In order to discourage the consumption of soft drinks at meal time, these beverages are no longer on sale in the dining rooms and are available only in the recreation room.

Posters have been placed throughout the dining rooms stating that smoking will be allowed only at meal hours. This prevents the milk customers from smoking following the between-meal feeding of milk and crackers. The milk bar is open from 9 to 9:45 a.m. and 2:30 to 3:15 p.m., and at any hour for those working under extreme temperatures. The night workers enjoy this privilege at corresponding hours.

We have cooperated with the government by featuring certain temporarily plentiful foods in our menu planning. Posters in the dining room serve to inform the employees of the purpose of our planning. During the period when a given food is featured, it is served in as many different forms as possible on the same menu, even though this ordinarily is not considered good menu planning.

Since so much help is needed to serve the workers quickly on the shortened lunch periods, we turn to the factory workers for help in checking, cashing, and serving. Those who assist receive their lunches in return for 20 minutes of work. A dietitian is on duty during all hours of meal service, both night and day.

Two new cafeterias, each of which seats 1240 people, were ready for occupancy in January 1943. Each has five lines, four of which are complete meal lines, and the fifth a "speed line" for the purpose of serving soups, sandwiches, salads, desserts, and beverages to those who bring their lunches and wish to supplement them.

We hope to install special equipment at the counter for preparing eggs for the 3 a.m. meal, which in reality is the dinner hour for the 11 p.m. to 7 a.m. shift. Many employees feel that they cannot eat the more "substantial" foods, such as meat and potatoes and vegetables, at this hour of the morning. Others are glad of an opportunity to eat a complete meal which gives them the energy to carry on their work satisfactorily, and also relieves their families of the need to prepare such a meal at unusual hours. Since this idea is still in the formative stage we would be very much interested in knowing how other industrial plants are meeting the problem of feeding the workers on this night shift.

Must have heard about Wyandotte Detergent!

Those half-man, half-horse centaurs in the fables were mighty smart . . . they saw Wyandotte Detergent at work and decided *four*-in-one goes farthest, *fastest!*

It's no myth that Wyandotte Detergent gallops through your cleaning tasks. Or that it does a double *double* job. Packed into this single, speedy standby are the answers to all these maintenance chores:

1. *Washing painted surfaces.* Wyandotte Detergent wipes grime quickly off walls and ceilings, keeps them looking fresh and new.

2. *Mopping or scrubbing.* Floors become clean in short order with Wyandotte Detergent around. Safeguards against slippery film, too!

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4. *Rejuvenating marble floors,* walls or fixtures. As a poultice, Wyandotte Detergent draws out even the most ingrained stains.

If you prefer an *all-soluble* cleaner, try Wyandotte F-100 for floors and walls. And ask your Wyandotte Man to help you untangle any cleaning quandary. He is equipped with short cuts that may well save you time and money.

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Book Reviews

Careers for the Home Economist. By Frances Maule. New York: Funk & Wagnalls Company, 1943. Cloth. Pp. 256. Price $2.

This is an unusually interesting vocational guidance book and should be put into the hands of all students who contemplate careers in home economics, preferably while they are in the senior year of high school and not later than the freshman year in college, especially in those institutions where expert vocational counsellors are not available.

The first chapter contains a "career quiz," a guidance test which, though unorthodox, will help prospective careerists to analyze their personal bents and abilities and to select a profession which will give them the greatest possible satisfaction and success. The test serves as an introduction to chapters on the various careers open to holders of a degree in home economics, all of which are described in a bright, interesting, journalistic style (all too rare among those engaged in these careers), and Miss Maule deserves praise for assembling from authoritative sources the pertinent facts about the positions she describes and giving a detailed and inviting, yet realistic, picture of each profession. A sound approach is maintained throughout in that the emphasis is on striving through training and experience to qualify for an expert type of service in home economics, especially if one objective is commanding a high salary.

Nutritionists and dietitians take first place in the book in chapters headed "The Nation Needs Nutritionists" and "Dietitians to the Fore." Credit is given to the American Dietetic Association and the American Home Economics Association for furnishing information contained in these and other chapters, and the reader is referred to official publications of both associations for further facts. As an inspiration to young women about to enter these fields several women who have gained prominence in their professions are described and quoted. Here again their qualifications as experts are stressed. Home economists in social service work, research, teaching, and in business and other fields are likewise described and their essential qualifications pointed out. There is an excellent, down-to-earth chapter on "breaking into print." The author deplores the fact that there are not enough publications using the type of material which home economists can supply and hence in this case the supply exceeds the demand, but she admits that when a publication does have an opening in its homemaking department it usually experiences considerable difficulty in finding a candidate with the required qualifications. Several different approaches to this field are suggested. In a concluding chapter on the "Ifs and Buts of Radio" the author's statement that none of the women headliners of radio are home economists suggests their limited progress in this direction. In fact, it is suggested that radio work must be considered by all but a gifted few as a "useful auxiliary skill."

Food Manufacturing. By Saul Blumenthal. Brooklyn, New York: The Chemical Publishing Company, 1942. Cloth. Pp. 664. Price $7.50.

The author, a consulting food chemist, has brought together a "compendium of food information" for the food manufacturer, chemist, and technologist. The book is apparently planned as a reference or handbook for the technologist. Definitions of basic processes used in food manufacturing, such as heating, pasteurization, sterilization, distillation, and others are given in the first chapter. Essential equipment is described. Many food materials are listed, with short paragraphic summaries of varieties, uses, chemical formulas, grade terms, and some nutrition information.

The formulas for making salad dressings, syrups, flavoring materials, and other products specify quantities suitable for commercial manufacture.

An extensive appendix gives many tables of weights and measures, chemical glossary, and conversion factors.

The publication, which is well indexed, is a good reference for teachers of foods courses and/or chemistry. It is not likely to be useful to a dietitian in an administrative position.

The Vitamin Directory. Published by Food Materials & Equipment Magazine, 232 Madison Avenue, New York, 1943. Paper. Pp. 48. Price $2.

In the words of the publisher, this appears to be "a complete, authoritative description and trade listing of all vitamin materials, assay methods and instruments, experimental animals, reference materials and reagents."

The majority of dietitians and nutritionists will find the booklet most valuable as a glossary of terms arranged in alphabetical order beginning with A (vitamins A_1, A_2) and including cross references such as "See Carotenes: Carotene products; oils, fish liver;" etc., followed in alphabetical order by such terms as adermin (which happens to be the old name for pyridoxine), alfalfa concentrate, aneurin, and "anti-baldness" vitamin. With regard to such terms as the last-mentioned, the authors indicate in parentheses that "the correctness of the term is not clinically established" and add the cross reference "See: inositol."

Each of the vitamin classifications, at the point where the accepted title for a given one appears alphabetically, for example, ascorbic acid, carries a summary of such details as: alternate names; description and properties; measurement; functions; the recommended allowances of the National Research Council; the minimum daily requirements, U. S. Food and Drug Administration, 1941; and a list of the commercial suppliers of this product in quantities.

The dietitian, too, will be interested in the methods of assay and the list of vitamin assay instruments. Unquestionably this is an unusual and very useful compilation.

A Directory of Minerals of Enrichment (of Foods and Beverages). Published by Food Materials & Equipment Magazine, 232 Madison Avenue, New York, 1943. Paper. Pp. 18. Price $1.

This is a companion booklet to *The Vitamin Directory*, being "a complete and authoritative description and trade listing of all the known minerals of nutrition, with their al-

Colorful breakfast tempter for sick-bed appetites—

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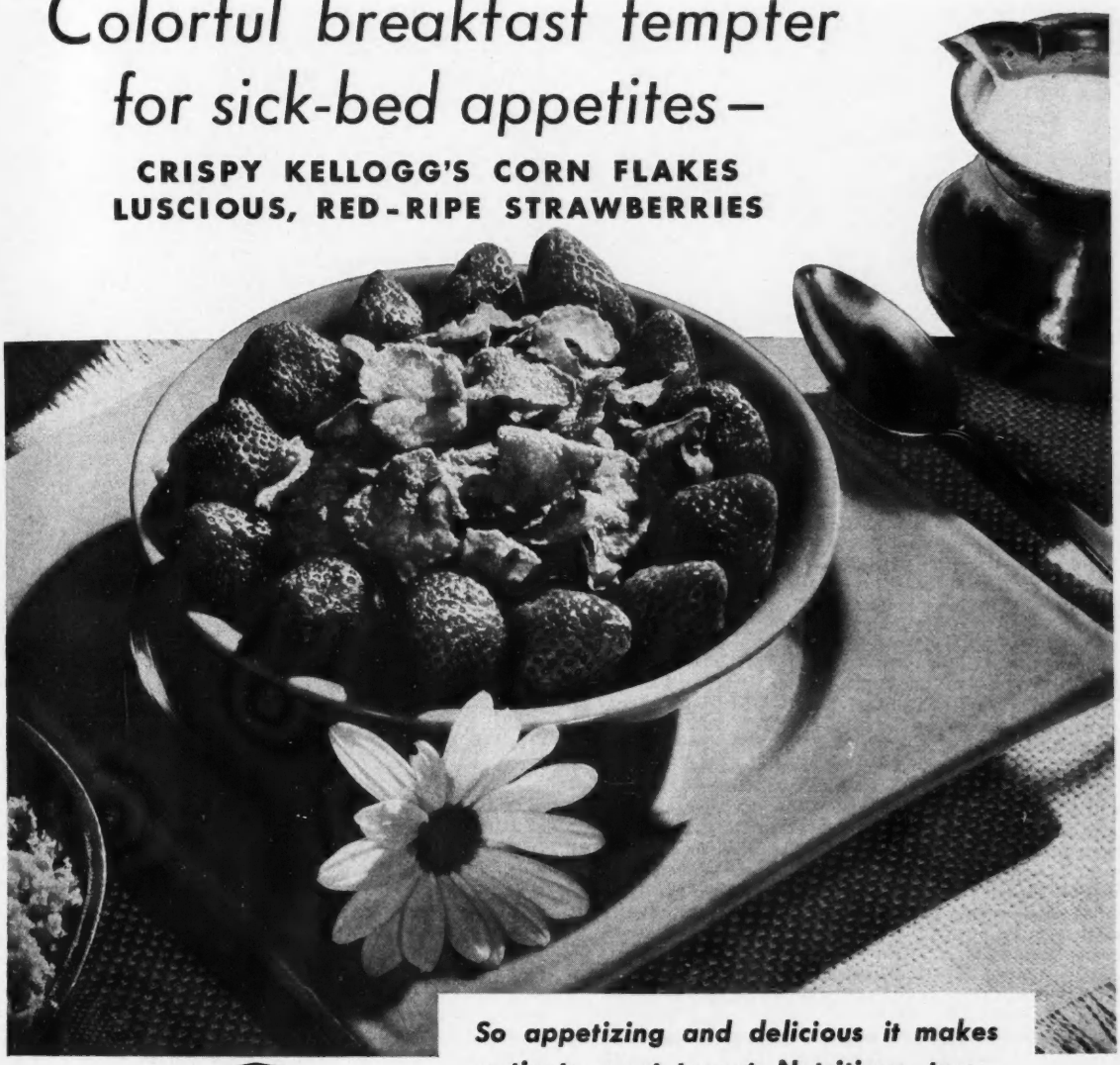
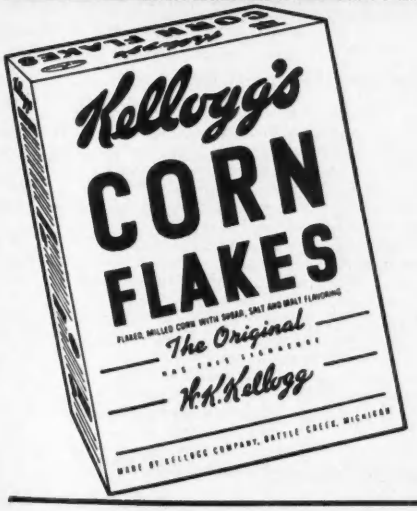
LUSCIOUS, RED-RIPE STRAWBERRIES





So appetizing and delicious it makes patients want to eat. Nutritious, too—and plentiful. Easy to serve... helps save time, work, fuel and other foods.

★ It's summer's great breakfast favorite—and has been for years. Fresh and cool as a dew-flecked daisy... appealing, satisfying. Kellogg's Corn Flakes topped with fresh strawberries make a breakfast you'd love yourself.

Lots of food value here, too. Kellogg's Corn Flakes provide whole grain nutritive values in Thiamin (Vitamin B_1), Niacin, and Iron. More—a normal serving of Kellogg's Corn Flakes (1 oz.) and Milk (4 oz.) supplies 6.3 grams of protein.

Not to be overlooked is the fact that Kellogg's Corn Flakes are *plentiful.* And they're ready to serve. In large institutions, just as in countless homes, they help save time, work, fuel and other foods.

Enjoy Kellogg's Corn Flakes at home any time of day... and at all eating places.

ternate names, description and composition (chemical and physical), properties, uses and suppliers." It follows the plan of the just-mentioned directory in that it constitutes a glossary of mineral terms and lists the manufacturers of the various mineral substances which are used in the enrichment of foods and beverages.

Good Nutrition for Everybody. By L. Jean Bogert, Ph.D. Chicago: The University of Chicago Press, 1942. Cloth. Pp. 165. Price $1.50.

According to its dust cover this small book is intended to supply "a working knowledge of nutrition for every woman, stressing the foods that you can get and pay for, with 123 appetizing recipes for wartime economy." The author has, in fact, succeeded very well in translating scientific information into the language of the layman. Furthermore, in doing so she has avoided the somewhat condescendingly chatty approach by means of which many present-day writers on nutrition attempt to sugar-coat the facts of life, nutritionally speaking. This businesslike little book is divided into chapters entitled in part as follows: "Why Change Our Food Habits?"; "What Foods Are Made Of"; "How Much Energy Do You Need?"; "Facts About Fats"; and "Pattern For An Adequate Diet." The chapter on recipes covers 45 pages and includes especially timely items: substantial soups, meat extender recipes, recipes for the use of organ meats and for meat alternatives such as dishes in which cheese, peanuts, soybeans and other legumes substitute in part for the precious meat.

Food, Health, Vitamins. By R. H. A. Plimmer, D. Sc. (Lond.), Professor of Chemistry, University of London, and Violet G. Plimmer. Ninth edition. New York: Longmans, Green and Company, 1942. Paperboard. Pp. 193. Price $2.40.

Obviously this book has been successful since it is now in its ninth edition. In preparing the current presentation the authors have kept in mind their practice of discarding what once seemed good and including what now proves best. For those who did not read the previous review which appeared in this JOURNAL for October 1939, it should be mentioned that the authors present their story on the basis of what constitutes (from the standpoint of vitaminology) a square meal, namely, one consisting of yellow fats, brown seeds, green vegetables and fruits, and red meats. A chart equally divided into these four colors, entitled "A Square Meal," lists the principal foods supplying the principal vitamins.

While the book is largely concerned with vitamins it does not neglect other important nutrients. And even though practically pocket size, it covers not only the essentials of the normal diet but also a discussion of the several deficiency states as well as exceedingly helpful chapters on common errors in the everyday diet, and diet in special conditions.

The outlines of weekly menus could well be required reading for Americans. For instance, the potato diet (*i.e.*, 2 lb. potatoes per man per day) which is detailed for a "standard size" family shows how this nutritionally good vegetable can be used as the mainstay (and by mainstay we mean seven days a week and twice a day) of the diet. Another outline of a week's menus is aptly entitled "A Fuel and Labor Saving Diet."

In spite of its fine print and compact makeup, the book is very legible, even to the index.

Food in Health and Disease. Preparation, Physiological Action, and Therapeutic Value. By Katherine Mitchell, B.A. Third edition. Philadelphia: F. A. Davis Company, 1942. Fabrikoid. Pp. 528. Price $3.50.

Simplicity and directness are characteristics of this textbook, attributes which should serve to lighten the always overburdened and at present hard-pressed curriculum of the nurses' training school, with respect to dietetics at least. The author writes with facility and demonstrates her ability, in the section on vitamins particularly, to present a subject graphically and concisely. In short, a real effort is made to give the nurse just what she needs to know, and can use, and to exclude that which is impractical or technically obtuse.

The book is divided into five parts, the first of which covers the subject of food elements and their uses, and normal diets; the second, diet in disease, which is subdivided into diets which are modifications in consistency, diets which are modifications in energy value, and those in which there are modifications of one or more constituents; the third, laboratory outlines which are correlated with preceding units of study; the fourth, a course in dietetics for student nurses, including references; and a fifth, or appendix, the usual tables in textbooks of this type and an index.

Edward Boteler Passano. A Portrait. By Robert S. Gill. Privately published. Baltimore: The Williams & Wilkins Company, 1942. Cloth. Pp. 64.

This book, published as a tribute to Edward B. Passano and as a memento of the attainment of his seventieth birthday by the employees of The Williams & Wilkins Company and of the Waverly Press, Inc., is a biography of the man who heads this dual organization. The Waverly Press has printed this JOURNAL since 1925 as well as the majority of other leading publications in this country which are concerned directly or indirectly with the pure and applied sciences and the professional and technical arts.

Dietitian's Aide Corps—New Volunteer Service Authorized by American Red Cross

As a result of the efforts of the War Activities Council, American Dietetic Association, of which Nelda Ross is chairman, a plan was developed by Margaret Gillam for the training of volunteer hospital dietitian's aides and presented to the American Red Cross, following the approval of the Executive Board of the Association. The group is to be officially designated as the Red Cross Volunteer Dietitian's Aide Corps and has been approved by National Headquarters, American Red Cross, according to a communication from Melva B. Bakkie, director, Nutrition Service of the Red Cross, dated April 9.

The Corps will be a part of and under the direction of Volunteer Special Services, and Mrs. Graham Dougherty, assistant director, Volunteer Special Services, is to be responsible for its organization and administration. The Nutrition Service will be responsible for the training of the aides.

Instructions concerning the organization and administration of the Corps and an outline of the dietitian's aide course prepared by the above-mentioned War Activities Council, will be sent to local Red Cross chapters, according to Miss Bakkie.

The Corps will be organized for the duration of the war and only in communities where hospitals request such service. To be eligible as a dietitian's aide, volunteers will be required to take a 60-hour training course, broken down into 20 hours of standard nutrition studies and 40 hours of special training, including 15 hours of supervised, practical hospital work. Throughout the training period, they will work under the supervision of graduate dietitians. Other requirements are that applicants agree to serve a minimum of 150 hours without remuneration, preferably within a 3-month period, and that they be over 18 years of age and have a high school education, or its equivalent. Duties of a dietitian's aide include preparation and checking of diets and menus, serving food to patients and hospital personnel, and clerical work.

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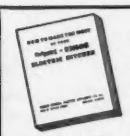
You'll find a great satisfaction in the very appearance of Hotpoint-Edison Electric Cooking Equipment. Modern as tomorrow, smart as a new ensign, completely functional. A glance tells you that it's practical as a gun turret.

Many reasons for their use on ships may apply to *your* post-war needs. Though war priorities prevent your buying Hotpoint equipment now, it's not too early to plan. Let us help you visualize the streamlined kitchen you'll have when Victory comes. Edison General Electric Appliance Co., Inc., 5692 W. Taylor St., Chicago.



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Current Literature

Contributed by Helen Baughman, Janet Engebretsen and Hilda McEwen, Dietary Department, Johns Hopkins Hospital, Baltimore; Quindara Oliver Dodge, School of Home Economics, Simmons College, and Women's Educational and Industrial Union, Boston; and the JOURNAL staff.

AMERICAN JOURNAL OF DIGESTIVE DISEASES

Vol. 10, January 1943

*External pancreatic fistula: Report of a case with physiologic observations. M. W. Comfort, A. E. Osterberg and J. T. Priestly.—p. 7.
*The external secretion of the pancreas and diabetes mellitus. H. M. Pollard, L. Miller and W. A. Brewer.—p. 20.
*The gastric mucosa, "gastritis" and ulcer. S. Wolf and H. G. Wolf.—p. 23.
*Peptic ulcer in the aged; a clinical and post-mortem study. J. Meyer and O. Saphir.—p. 28.
*Unusual vascular diseases within the abdomen. S. Kimball, M. H. Lipsitz and K. Terplan.—p. 30.
*Fatigue. Editorial.—p. 41.
*Constitutional inadequacy. Editorial.—p. 41.
What socialized medicine offers. Editorial.—p. 42.

Vol. 10, February 1943

*Clinical experiments with riboflavin, inositol and calcium pantothenate. M. G. Vorhaus, M. L. Gompertz and A. Feder.—p. 45.
*The oral use of the amino-acids of hydrolyzed casein (Amigen) in surgical patients. R. Elman.—p. 48.
*The relationship between roentgenographic abnormalities of the gall bladder and constipation. G. H. Laing, J. M. Beazell and A. C. Ivy.—p. 50.
*The chemotherapy of chronic ulcerative colitis. M. A. Wills and T. T. Mackie.—p. 55.
*Thiamine influence upon laxative action. S. Loewe, I. Loewe and R. Knox, Jr.—p. 65.

Pancreatic Juice. In a case of external pancreatic fistula, gastric contents appeared to be a much more potent stimulant of pancreatic secretion than foods alone. Meals low in fat and high in carbohydrate and protein stimulated a greater flow of all components of pancreatic juice than did meals high in fat.

Secretin and Diabetes Mellitus. In 13 diabetics, diminutions in volume of secretion and total secretion of bicarbonate and the enzymes, amylase and trypsin were noted and, with one exception, were confined to those known to have had the disease for three years or longer. These abnormalities of the duodenal-pancreatic juice could be correlated only with the duration of the disease and not with age, severity, acidosis, amount of insulin or diet.

Gastritis and Ulcer. Undue and prolonged acceleration of acid secretion in the stomach, however provoked, resulted in hyperemia and engorgement of the mucous membrane resembling hypertrophic gastritis. The mucosa in this state was unusually susceptible to injury, and trifling traumata resulted in hemorrhages and small erosions. Ordinarily the mucosa was protected by an effective coating of mucus; loss of this, in the face of minor traumata, led to edema, inflammatory changes, erosions and hemorrhages. Contact of acid gastric juice with denuded surface induced further hyperemia and acceleration of acid secretion. Prolonged contact of acid gastric juice with a minor erosion resulted in ulcer formation.

Peptic Ulcer in the Aged. While it is generally accepted that chronic peptic ulcer occurs in the aged and that such patients die from hemorrhage and perforation, this study directs attention to the occurrence of acute peptic ulcers in the aged which may become chronic but more often result fatally due to acute hemorrhage and perforation. The cause may be primary, or secondary to acute febrile or gallbladder disease, operative procedure, or cardiac failure. Vessel changes at the base of ulcers encountered in the older age group seemed definitely more severe than in other age groups.

Chronic Abdominal Symptoms Due to Vascular Diseases. Vascular diseases within the abdomen may give rise to acute and chronic abdominal symptoms. Vascular origin of abdominal symptoms must be considered in the presence of arteriosclerosis, auricular fibrillation, previous coronary disease or cardiac failure and when there is evidence of emboli elsewhere.

Fatigue. Flat blood sugar curves in neuropsychiatric patients supported the idea that these patients were suffering from hyperinsulinism. Under the influence of atropine, blood sugar curves of the same patients were more nearly normal. A regimen of frequent feeding with carbohydrate and administration of atropine over a period of several weeks or months resulted in marked alleviation of the fatigue of which these patients previously complained. Because of other physiological experiments in which thalamic stimulation, with intact right vagus, had resulted in hypoglycemia, presumably due to hyperinsulinism, it seemed that worry and anxiety had reproduced the stimulation of the thalamus which, being transmitted via the right vagus fibers, had created a chronic hypoglycemia with resulting weakness and fatigue.

Constitutional Inadequacy. The term "constitutional inadequacy" seems to mean "naturally not up to the job of being well, physically, mentally, and perhaps socially." Looseness of application of this term may be dangerous in the hands of the inexpert and may give the stop-signal to further study. Currently, the diagnosis of constitutional inadequacy is used for persons whose endless complaints have no basis in perceptible pathological lesions and whose response to treatment is only temporary. Nomenclature in the diagnosis of such cases is unimportant but the physician must use a combined attack—physiotherapy, mental encouragement, endless patience, as well as a balanced diet, vitamins and drugs.

Clinical Use of Riboflavin, Inositol and Calcium Pantothenate. Following administration of riboflavin, bed sores showed rapid healing. Combined use of riboflavin and other members of the B complex may be of even greater value in decubitus. Inositol in oral doses of 1 to 2 gm. had no harmful effects. Beneficial results were noted in a variety of skin diseases but not in alopecia. Calcium pantothenate seems to have little value as a human antigray hair factor.

Oral Use of Amino Acids. Amino acids of hydrolyzed casein (Amigen) were administered directly into the gastrointestinal tract in several types of surgical patients in order to spare the need for protein digestion. Absorption and

Palatable ... AND DIGESTED WITH REMARKABLE EASE

In the formulation of meals for the acutely or chronically ill patient, palatability must be given first consideration. The effects of temperature elevation, toxemia, and enforced inactivity contribute to loss of appetite. Attractive and tasty dishes must be served in order to overcome this frequently encountered anorexia.

New Improved Ovaltine is a delightful and welcome change from the usual beverage and between-meal feeding. Its appealing taste overcomes the frequently encountered resistance to food, hence it is usually taken with relish. Its low curd tension promotes rapid gastric emptying which, together with its easy digestibility, prevents abdominal distress and loss of appetite for the next meal.

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CARBOHYDRATE	30.00 Gm.	66.00 Gm.	VITAMIN A	1500 U.S.P.U.	2953 U.S.P.U.
FAT	3.15 Gm.	31.5 Gm.	VITAMIN D	405 U.S.P.U.	432 U.S.P.U.
CALCIUM	0.25 Gm.	1.05 Gm.	VITAMIN B_2	300 U.S.P.U.	432 U.S.P.U.
PHOSPHORUS	0.25 Gm.	0.903 Gm.	RIBOFLAVIN	0.25 mg.	1.28 mg.
IRON	10.5 mg.	11.9 mg.	NIACIN	4.95 mg.	7.1 mg.

*Each serving made with 8 oz. milk; based on average reported values for milk.

utilization occurred when whole protein had been ineffective. Use of Amigen seemed to permit assimilation of much larger daily amounts of protein than seemed possible when whole protein was given.

Gallbladder. Constipation and sluggish gallbladder evacuation are related. Gallbladder stasis alone is not a predisposing factor in the production of either gallstones or gallbladder infection.

Chemotherapy of Chronic Ulcerative Colitis. Sulfathiazole, sulfadiazine, and sulfaguanidine have been used in treating ulcerative colitis with marked improvement in 78% of the cases. Sulfadiazine was the drug of choice in all instances. Sulfaguanidine is of definite benefit in cases without excessive diarrhea. None of the drugs could be considered as specific in this disease and no cases could be considered cured by chemotherapy.

Thiamin and Laxative Action. Experiments in the rhesus monkey give no support to the assumption of a synergistic influence of vitamin B_1 upon laxative action. Daily doses of 1 to 100 mg. thiamin hydrochloride per kilogram body weight orally administered over periods of 2 to 17 days did not significantly increase the effectiveness of a laxative.

AMERICAN JOURNAL OF DISEASES OF CHILDREN

Vol. 65, February 1943

*Value of complex carbohydrates in diets of normal children. I. G. Macy, F. C. Hummel and M. L. Shepherd.—p. 195.

*Independence of serum cholesterol from exogenous cholesterol in infants and children. W. Heymann and R. Rock.—p. 235.

*Need for observations of growth in appraising adequacy of nutrition in childhood. H. C. Stuart.—p. 320.

Complex Carbohydrates in Children's Diets. Complex carbohydrate (fiber) content of food and feces of 18 healthy children 4 to 12 years old was determined over a period of 2455 experimental days. Ability of subjects to decompose fiber varied widely, particularly in younger children. Fecal cellulose plus hemicellulose per kilogram body weight was related to fecal nitrogen. Correlations of significance were drawn between fiber content and fecal fat, fecal carbohydrate and laxation rate.

Serum Cholesterol. Administration of cholesterol in oil for 2 to 4 weeks to infants and children produced no serum cholesterol rise. On a diet devoid of cholesterol, 5 maintained cholesterol levels for 10 weeks which is in agreement with observations on celiacs who have normal cholesterol levels. Human beings exist without cholesterol administration because it is probably synthesized independently.

Growth and Nutrition in Childhood. A great deal is known about what children eat and how they grow, but very little is said of that relationship. A plea is made in this paper for further studies in this direction.

AMERICAN JOURNAL OF MEDICAL SCIENCES

Vol. 205†, February 1943

*The vasodilating effects of nicotinic acid. G. A. Goldsmith and S. Cordill.—p. 204.

*Studies of B vitamins in the human subject: failure of riboflavin therapy in patients with the accepted picture of riboflavin deficiency. T. E. Machella and P. B. MacDonald.—p. 214.

Nicotinic Acid. Nicotinic acid administered orally or intravenously in sufficient doses causes flushing and burning of the skin. No significant change either in basal metabolic rate or body temperature precedes the characteristic skin reaction; vasodilation is due to local effect on arterioles of the skin. An antagonistic relationship exists between adrenalin and nicotinic acid; simultaneous administration of adrenalin prevents flushing of the skin.

Riboflavin Therapy. Manifestations of riboflavin deficiencies in 20 cases failed to respond to riboflavin therapy. Cheilosis, keratitis, dermatitis, and glossitis were diagnosed in these patients. Potency of synthetic riboflavin was indicated by satisfactory administration to rats, as well as by other workers using the same preparation. None of the patients received less than 6 mg. daily, and if no response occurred the dosage was increased. Conflicting data concerning diagnosis of the syndrome have caused doubt as to successful vitamin therapy.

AMERICAN JOURNAL OF PHYSIOLOGY

Vol. 138, February 1943

*Gluconeogenesis and cellular injury. A further inquiry into the mechanism involved in diabetes enhanced by inflammation. V. Menkin.—p. 396.

*Thiamine and the specific dynamic action of carbohydrate and fat. G. C. Ring.—p. 488.

*The effect of bile in the intestine on the secretion of pancreatic juice. J. E. Thomas and J. O. Crider.—p. 548.

*The absence of rennin from adult human gastric juices. L. B. Dotti and I. S. Kleiner.—p. 557.

*Histological studies of the pancreas and associated tissues of wild and experimentally fed young Chinook salmon. L. R. Donaldson.—p. 560.

Gluconeogenesis and Cellular Injury. Injured cells, as manifested by inflammation in both diabetic and nondiabetic animals, are characterized by an increase in their protein catabolic processes and by potentially becoming foci of gluconeogenesis.

Specific Dynamic Action of Carbohydrate and Fat. The specific dynamic effect of glucose (4.2%) is less than that of glucose and thiamin (8.0%). Thiamin in water has very little if any effect upon the basal metabolism (0.9%). When thiamin is added to glucose, the extra energy observed is probably expended in converting sugar into fat. The fact that the respiratory quotient is higher after giving thiamin and glucose than after glucose alone supports this suggestion. When oleic acid is added to glucose and thiamin, the specific dynamic effect (6.7%) is not increased over that of the glucose and thiamin. Unless the oleic acid has no specific dynamic action, the effect of thiamin in stimulating conversion of carbohydrate into fat must be reduced. The specific dynamic effect of oleic acid appears not to be affected by thiamin.

Bile in Intestine and Pancreatic Secretion. In normal unanesthetized dogs injection of ox bile or of dog bile into the intestine does not increase the rate of secretion of pancreatic juice. The amount of pancreatic juice secreted in response to the presence of peptone, soap or HCl in the intestine is less when bile is also present than when it is absent. Mellanby's theory that bile is an important stimulus for pancreatic secretion is based on insufficient evidence.

Rennin and Gastric Juice. By using the phenomenon of digestibility of rennin by peptone as a basis for the detection of rennin, it was found that no rennin was present in the gastric juice of human adults.

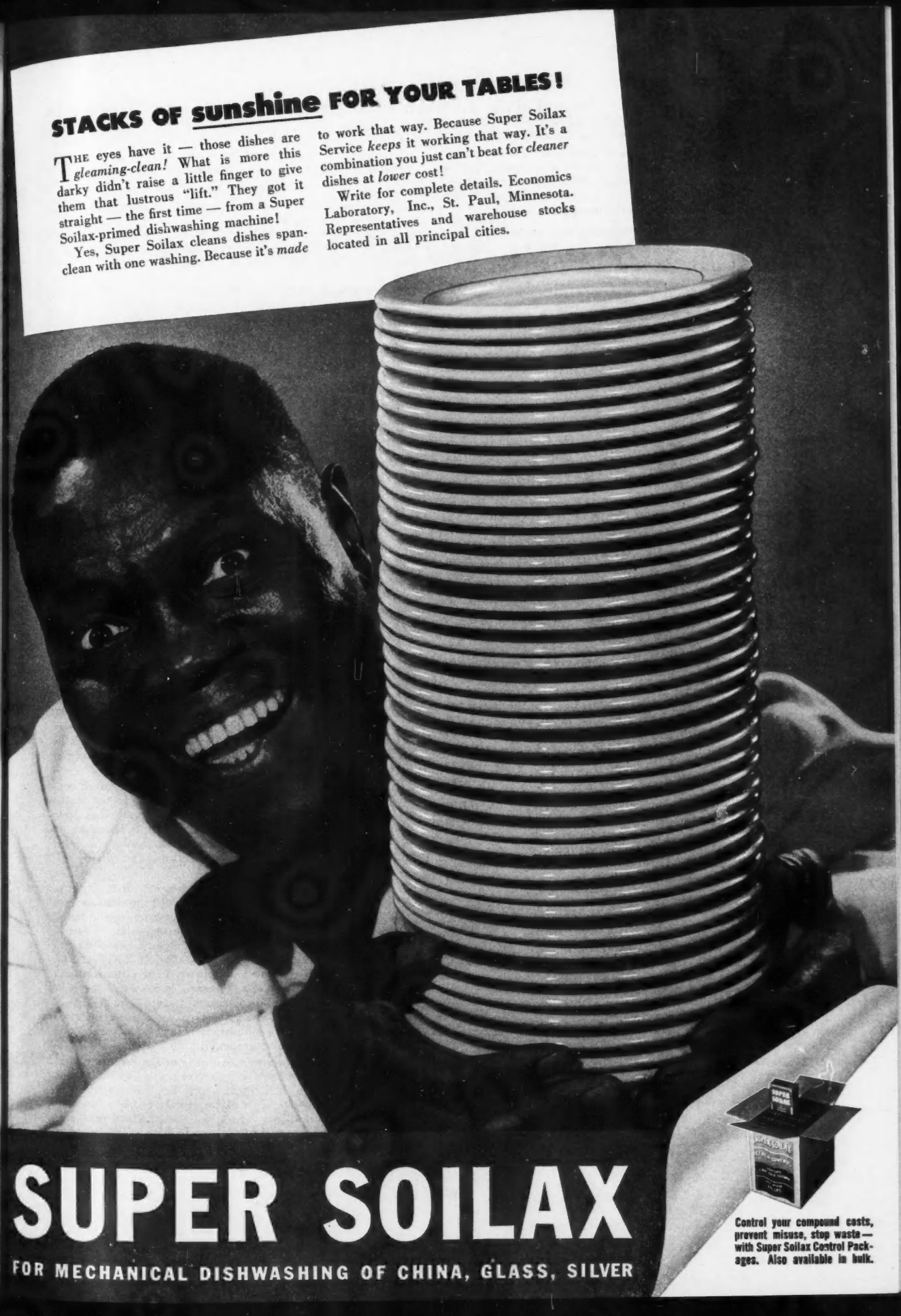
Pancreatic Tissue of Salmon. Profound changes occur in pancreatic tissue of fish as a result of diet. Fish fed a diet of 100% beef liver had excessive fat deposited in the pancreatic tissue. Diets of 20% salmon viscera, 20% beef liver, and 60% seal meal induced degeneration of the pancreatic tissue, while fish fed a diet of one-third salmon viscera, one-third beef liver, and one-third seal meal had normal appearing pancreatic tissue. Fresh beef pancreas in the diet added to the fat content of the fish pancreas. Addition of salmon oil, or salmon oil and cholesterol to synthetic diets produced destructive changes in the fish pancreatic tissues. Addition of pancreatic extract or choline to the synthetic diets produced beneficial effects in preventing destructive changes.

AMERICAN JOURNAL OF SURGERY

Vol. 59, February 1943

*Massive intestinal resection. E. P. Coleman and D. A. Bennett.—p. 429.

Diet After Intestinal Resection. Experimental work on dogs indicates that the rate of intestinal absorption above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the site of resection is twice that of normal. The compensatory reaction occurs entirely above the site of resection; in general after massive intestinal resection the remaining intestine works more efficiently in the absorption of carbohydrates and does poorly in the absorption of fats.

ANNALS OF INTERNAL MEDICINE

Vol. 205, February 1943

*Newer knowledge of epilepsy. W. G. Lennox.—p. 145.
*Pancreatic tissue extract (insulin-free) in the treatment of peripheral vascular disease. C. Klein, G. Saland and H. Zunow.—p. 214.

Epilepsy. More has been learned of the real nature of epilepsy in the past 20 years than in the preceding 20 centuries. Satisfactory results of fasting led to practical use of the ketogenic diet. Research in recent years has been based on electroencephalography and blood chemistry. Medical science must search for a means of control of disturbed brain waves of persons carrying a predisposition to epilepsy.

Peripheral Vascular Disease. When injected intramuscularly, pancreatic tissue extract, insulin-free, produced a drop in muscle temperature of the lower extremities. Patients treated regularly over long periods of time with extract showed improvement. Controls receiving no specific medication but hygienic care consistently showed greater improvement than extract-treated cases.

ARCHIVES OF INTERNAL MEDICINE

Vol. 71, February 1943

*Surgical treatment for cirrhosis. H. B. Cates.—p. 183.
*Storage and significance of tissue glycogen in health and disease. S. Soskin.—p. 219.

Surgical Treatment for Cirrhosis. Prognosis of patients with cirrhosis is usually poor. Of 117 cases not treated surgically, 72% had died within one year after onset of symptoms; 38% of the group which survived were treated medically and lived over one year. Restoration of circulation from the portal system by mechanical means to alleviate ascites is not easily achieved because the patient is susceptible to shock, wound healing is impaired, and administration of anesthetic is dangerous. Medical treatment alone seems more satisfactory in the light of these facts.

Tissue Glycogen. Glycogen is not only a reserve storage product but is also important for the well-being and functional integrity of tissues. Diabetics are not restored to normal by control of hyperglycemia and glycosuria unless glycogen is being stored in tissues. When synthalin is administered, gluconeogenesis is depressed by damaging the liver, which is obviously wrong even if diabetic symptoms are controlled. Likewise, a high-fat diet is incorrect, but not nearly so dangerous. Diabetic coma requires carbohydrate administration as well as insulin to replenish glycogen stores, although the blood is saturated with sugar.

BRITISH MEDICAL JOURNAL

No. 4281, January 23, 1943

*Pernicious anaemia of pregnancy. Editorial.—p. 105.
*Oestrogen treatment of diabetics. Editorial.—p. 107.
The heaviest woman. Editorial.—p. 108.

No. 4282, January 30, 1943

*Calorie control diabetic diet. R. D. Lawrence.—p. 143.

No. 4283, February 6, 1943

*The bread factor in a wartime human dietary. M. B. Richards.—p. 161.
*Cirrhosis of the liver. Editorial.—p. 165.
*Pathogenesis of peptic ulcer. Editorial.—p. 165.
Treatment of diabetic coma. Editorial.—p. 166.

No. 4284, February 13, 1943

*Maternal nutrition during wartime. Report Medical Society of London.—p. 199.

No. 4285, February 20, 1943

*Influence of diet on renal volume. Editorial.—p. 226.

No. 4286, February 27, 1943

*Vitamins and physical fitness. A. A. Harper, I. F. S. Mackay, H. S. Raper and G. L. Camm.—p. 243.
*Effects of vitamins on experimental hyperthyroidism. V. Korenchevsky, K. Hall and B. Clapham.—p. 245.
*Progesterone and vitamin E. Editorial.—p. 259.
*Pasteurization of milk. G. S. Wilson.—p. 261.

Pernicious Anemia in Pregnancy. Severe macrocytic anemia occurs frequently in pregnant women in India. It appears to be due to shortage of both the PA factor and iron. It usually responds to liver therapy plus iron and transfusions if necessary. Subacute combined degeneration never occurs and the child is normal.

Estrogen Treatment of Diabetes. The relatively high incidence of diabetes mellitus in women at the menopause is possibly connected with hyperactivity of the pituitary gland which is then no longer inhibited by gonadal secretion. This suggests treatment with estrogens or androgens in doses adequate to depress pituitary function, but results of such treatment in a number of cases have not been encouraging.

Calorie Control of Diabetes. Lawrence refutes the idea of calorie control in diabetes. He believes that unconcerned replacement of carbohydrate by equicalorie protein and fat is untrue and dangerous for insulin cases.

Wartime Bread. Addition of calcium to the national wheatmeal flour, as shown by feeding experiments with rats, tends to enhance the value of the diet, judging from the live-weight increase of young rats. These figures do not support further additions of vitamin B in the form of aneurin when national wheatmeal bread is used.

Cirrhosis of the Liver. Various work suggests that there is an etiological relationship, either direct or indirect, between nutritional deficiency and cirrhosis. Lack of essential factors may lead directly to the development of the disease and the malnourished liver may become more vulnerable to toxins. A highly nutritious diet supplemented with vitamin B complex or a low-choline, low-casein diet with added cystine has been suggested. Infantile cirrhosis in Hindu children is thought to be caused by a diet of cow's milk, along with B. coli infection.

Peptic Ulcer and Liver Dysfunction. Ask-Upmark contends that liver dysfunction is an essential factor in the etiology of peptic ulcer. He favors the view that liver damage causes hypoglycemia which exerts an influence on gastric secretion. The nervous system through a vagal reflex in turn produces hypersecretion, and finally ulceration.

Maternal Nutrition. Drastic restriction in meat, eggs and fish has reduced the main sources of first class protein and iron. Priority for milk for pregnant and nursing women has helped to neutralize the dietary shift. There is some evidence of an increase of deficiency anemia but no evidence of calcium shortage. Substitution of 85% extraction flour for white bread has improved the situation with regard to the B complex. There is some evidence of a shortage of vitamin C but vitamins A and D are relatively satisfactory because of the priority of milk and the fortification of margarine. Emphasis is placed on natural foods rather than synthetic vitamins.

Diet and Renal Volume. Kidneys of hypertensive dogs were in general more sensitive to changes in diet than those of animals with normal blood pressure. The ingestion of salt and water above that of an ordinary diet causes an acute increase in kidney size and a rise of blood pressure. The results also give point to salt restriction in treatment of hypertension.

Enriched Farina and the thiamine needs of children

Thiamine is not stored in the body to any considerable extent. An appreciable proportion of the daily intake is excreted in the urine. Studies of the thiamine intake of healthy children from four to ten years old[1] have shown that on the average 27.2 per cent is excreted daily. When the excretion falls below 20 per cent supplementation is required.

On the average an intake of 45 micrograms of thiamine per 100 calories, or slightly less than one milligram daily (one milligram equals 1,000 micrograms) was adequate for excellent health.

One way to help insure an adequate intake of this important vitamin is to select foods that carry their share of vitamin B_1 (thiamine). PILLSBURY'S ENRICHED FARINA contains 100 micrograms (0.1 milligrams) of thiamine per 100 calories.

When advising the mother in matters of diet, consider the merits of PILLSBURY'S ENRICHED FARINA whenever a bland, easily digested cereal is indicated. In addition to its normal content of nutrients, Enriched Farina contains per pound:

1.66 milligrams of thiamine (vitamin B_1)
6.0 milligrams of niacin (nicotinic acid)
6.0 milligrams of iron

PILLSBURY'S ENRICHED FARINA is low in crude fiber but high in energy value (calories).

[1]"The Urinary Excretion of Thiamine in Normal Children," R. A. Benson, C. M. Witzberger and L. B. Slobody. Journal of Pediatrics 18: 617, 1941.

"Further Studies on The Urinary Excretion of Thiamine in Children," R. A. Benson, L. B. Slobody, C. M. Witzberger and Liese Lewis, Journal of Pediatrics 20: 454, 1942.

Pillsbury's *Enriched* Farina

Vitamins and Physical Fitness. Manchester cadets receiving vitamin supplements A, C and D to the diet were less susceptible to minor respiratory and gastro-intestinal complaints than those receiving control tablets containing no vitamins. The group receiving vitamins showed greater increase in resting vital capacity and in breath-holding and endurance times and had a faster resting pulse rate than the control group.

Hyperthyroidism and Vitamins. Useful effects of thyroid hormone cannot be normally and fully operative unless liberal amounts of vitamins are given simultaneously because of the increased vitamin requirements which arise during conditions accompanied by increased metabolism.

Progesterone and Vitamin E. A combination of corpus luteum hormone (progesterone) and vitamin E may have a beneficial effect in habitual abortion but more experimental evidence is needed.

Pasteurization of Milk. The full case for milk pasteurization is put forth in question and answer form.

FOOD RESEARCH

Vol. 8, January-February 1943

*Comparative shortening value of some commercial fats. L. R. Hornstein, F. B. King and F. Benedict.—p. 1.

*Effect of different cooking methods on the vitamin C content of quick-frozen broccoli. B. Barnes, D. K. Tressler and F. Fenton.—p. 13.

*Peanut butter as a source of thiamin, calcium, phosphorus, and iron. C. D. Miller, L. Louis and C. Peterson.—p. 27.

*Acidified vegetable juice blends. H. G. Beattie and C. S. Pederson.—p. 45.

*Thiamin content of fresh and frozen vegetables. J. C. Moyer and D. K. Tressler.—p. 58.

Commercial Fats. From the standpoint of breaking strengths of test products and their relationship to fundamental properties of the fats, the fats tested were listed in the increasing order of breaking strengths of pastries mixed at 22°C. by machine. At that temperature hydrogenated vegetable oil No. 3 was the best shortening agent. Refined steam-rendered lard, butter oil, and butter No. 1 occupied second place. Hydrogenated vegetable oil No. 2, butter No. 2, and hydrogenated lard ranked third. Hydrogenated vegetable oil No. 1 and oleo-stearine cottonseed oil compound came next, then leaf lard and oleomargarine made from animal fat. Oleomargarine made from vegetable oil was the poorest shortening agent for pastry mixed at 22°C.

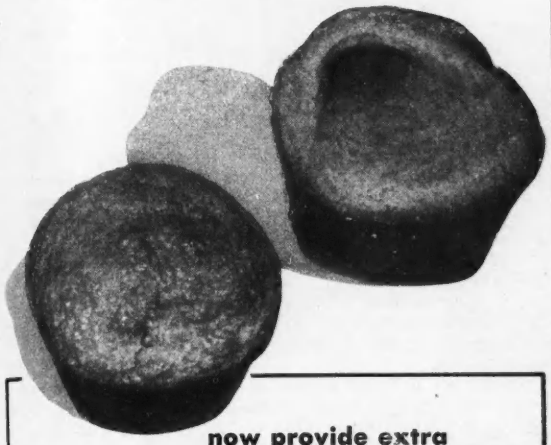
The temperature at which pastry dough was mixed affected the shortening value of some fats much more than that of others. The butter fats were most affected. They were relatively poor shortening agents at 18°C. but ranked among the best at 22 and 26.5°C. Hydrogenated vegetable oil No. 3 and refined steam-rendered lard were only slightly affected by changes in temperature, however, and were excellent shortening agents at all three temperatures studied. The oleomargarines produced the least tender pastries at 26.5°C. just as they did at 22°C. The other fats changed in shortening value by variable amounts as the temperature was raised. It is apparent that there is no correlation between breaking strengths of either pastries or shortbreads, and the physical and chemical constants. Although the fat with the highest iodine number was an excellent shortening agent at all temperatures used, the three fats next in order of iodine number ranked in the lower half as shortening agents. Butter oil, on the other hand, with the lowest iodine number of all the fats, was one of the best shortening agents at the higher temperatures. Congealing points and melting points were also poor criteria of the shortening power of the fats. "Fats which became softest during the process of being incorporated into a dough have a tendency to form the most tender pastries."

Vitamin C Content of Quick-Frozen Broccoli. The vitamin C content of different stalks of quick-frozen broccoli varied from 74 to 100 mg. per 100 gm. and averaged 88 mg. per 100 gm. The stalks contained more vitamin C than the buds. The reverse was true, however, in fresh raw broccoli from another lot where the buds were the richer source of vitamin C. The vitamin C content of the frost in the packages of quick-frozen broccoli varied from 18 to 30 mg. per 100 gm. The amount of frost in each package was small (10 to 30 gm.) when compared with the weight of the vegetable. Slight defrosting was accomplished, with no destruction of vitamin C, by allowing the vegetable to stand at room temperature, 78°F., for 1¼ hours or in a mechanical refrigerator at 40°F. for 4 hours. When defrosted in the refrigerator at 40°F. for 16 hours, 6% of the vitamin C was lost. When solidly frozen broccoli was boiled in 500 gm. water in an enamel pan it retained about 60% of its vitamin C. Covering or uncovering the pan made no appreciable difference in the loss or solution of the vitamin. When solidly frozen broccoli was boiled in a covered enamel pan in water sufficient to keep it from burning (100 gm.) it retained 82% of its vitamin C. When boiled in 500 gm. water in an uncovered enamel pan, it retained 57% of its vitamin C. The variation was in the amount of vitamin C that went into solution. Slight overcooking in boiling broccoli did not cause increased vitamin C loss. The composition of the pan made no difference in the amount of the vitamin C dissolved, and there were but little differences in retention. Slightly defrosted broccoli cooked in the pressure saucepan retained 76 and 80% vitamin C, 11 to 12% was lost. The product was acceptable. The stainless steel and aluminum Flex-seal and the Presto pressure saucepans gave comparable results. Cooked broccoli lost 19% of its vitamin C on standing in the refrigerator at 40°F. for 24 hours and 34% on standing for 48 hours. The quick-frozen broccoli stored at 0 to −10°F. did not lose vitamin C during 5 months' storage.

Peanut Butter. The thiamin contents of three samples of smooth peanut butter and one of coarsely ground peanut butter made by large commercial concerns varied from 324 to 450 mcg. per 100 gm., an average of 380 mcg. per 100 gm. The three smooth peanut butters contained an average of .034% calcium and the coarsely ground .048% calcium, an average of .038% for the four samples. The phosphorus contents, which were nearly uniform, averaged .404%. The iron varied from .00167 to .00198% with an average of .00187%. One tablespoon peanut butter, weighing approximately 15 gm., or that used with 2 slices of bread, would furnish about 40% of the total thiamin in a sandwich made of whole wheat bread (containing 50% whole wheat flour) and about 65% of the thiamin in a sandwich made of white bread. If white flour enriched with thiamin were used in making the whole wheat bread and the white bread, then the peanut butter would furnish in each case approximately 25 and 30% of the total thiamin content of the sandwiches. However, the peanut butter furnishes only one-third to one-fourth the amount that it could supply if much of the thiamin were not destroyed in the roasting process. Obviously, the potential values of peanut products, including peanut butter, as economical sources of thiamin in the diet, are not being realized at present. It should be possible for the peanut industry and the commercial concerns manufacturing these products to devise ways of making peanuts palatable without serious destruction of their excellent thiamin content.

Acidified Vegetable Juice Blends. Extracted juices of celery, carrots, beets, onions, turnips, rutabagas and red cabbage, blended with sauerkraut juice and acidified to *p*H 4 could be flash-pasteurized at 180°F. with little loss of the characteristic vegetable flavor. Such blends of carrot, celery, beet, onion, and turnip juice, further blended well with tomato juice, yield various pleasing vegetable beverages.

2 delicious muffins



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3.11 mg.	1.48 mg.	Niacin
3.50 mg.	1.84 mg.	Iron
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331	310	Calories

These figures are based on serving 2 muffins weighing 3-1/3 oz. total.

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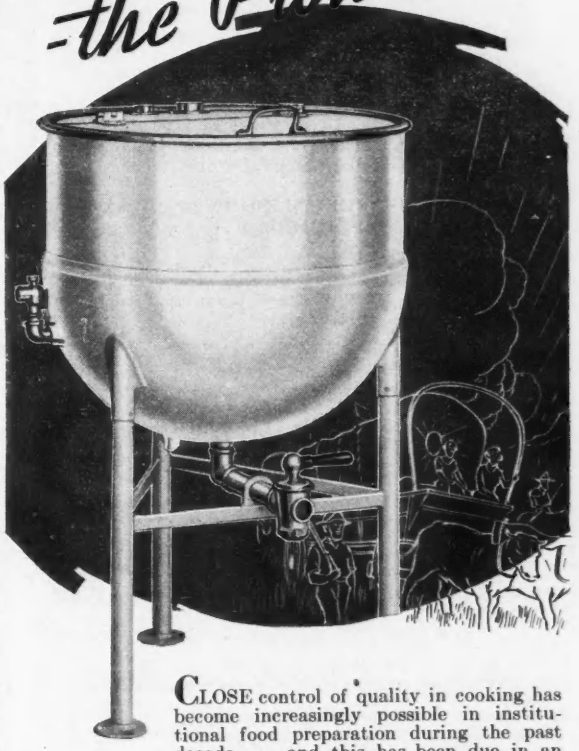

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Thiamin Content of Vegetables. The thiamin content of asparagus and peas was determined by the thiochrome technique when the vegetables were freshly harvested, at various stages in the processing, and after freezing. Losses during processing varied from 16 to 20% for asparagus and from 5 to 25% for peas. The greater loss in each case took place at the end of the season for the particular vegetable. Delays in the processing of one lot of peas showed that this vegetable could be held for some time at room temperature without any destruction of thiamin. Samples of asparagus and peas were stored for 7 and 5 months at −12, −22, and −40°C. (10, −8, and −40°F.). No significant loss of thiamin occurred at any of the storage temperatures.

HOSPITALS

Vol. 17, January 1943

Wartime adjustments in the hospital kitchen. P. S. Willis.—p. 27.
*The hospital diet at today's food costs. C. M. Connick.—p. 108.

The Hospital Diet. An excellent and comprehensive article with many constructive suggestions, this is worthy of the attention of all dietitians.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 121, February 27, 1943

*The prevention and management of peptic ulcer. R. S. Boles.—p. 640.
Handbook of nutrition: XXIII. Evaluation of nutritional status. J. D. Kruse.—p. 669.

Vol. 121, March 6, 1943

*Treatment of portal cirrhosis. C. H. Greene.—p. 715.
*Hyperbilirubinemia. T. A. Johnson and H. L. Brockus.—p. 729.
*Liver dysfunction. S. A. Portis.—p. 733.
*A status report on the external use of cod liver oil. Council on Pharmacy and Chemistry.—p. 759.

Vol. 121, March 13, 1943

*The older worker. A. J. Carlson.—p. 806.
*Criteria for the evaluation of nutrition experience in industry. F. C. Bing.—p. 813.
*Nutritional activity in industry. G. R. Cowgill.—p. 817.
The national nutrition program for industry. R. S. Goodhart.—p. 823.
*Handbook of Nutrition: XXII. Adequacy of American diets. H. K. Stiebeling.—p. 831.

Vol. 121, March 20, 1943

*Vitamin B_1 therapy in diabetic neuritis. W. Needles.—p. 914.
*Enriched white flour. R. D. Williams, H. L. Mason and R. M. Wilder.—p. 943.

Peptic Ulcer. Only a certain type of individual will produce an ulcer, one with a suggestive physiologic, psychologic and anatomic pattern probably fashioned by a certain qualitative type of automatic nervous system. As a rule, these individuals have energetic effective personalities, and they live in a constant state of excitement, anxiety, fear or some other emotional ferment. In some, with little external evidence of instability, outward calm may hide inward chaos. The peculiar quality of the autonomic nervous system referred to is susceptible to influences that favor ulcer production by bringing about alterations in the blood supply to the stomach and duodenum that diminish the vitality of the mucosa of these structures. Secondarily, the affected mucosa becomes subject to the corrosive action of acid gastric juice. Acid and pepsin are essential factors in the development of ulcer, but the mechanism of their production is imperfectly understood; certainly any attempt that is made to control their secretion should take into consideration the part played by the midbrain and various systemic disturbances. Tobacco in an ulcer-susceptible individual appears to be a consistent factor in the cause of ulcer and is of major influence in the prevention of healing and in the recurrence of the lesion. Respiratory tract infections, such chronic infections as are found in the gallbladder and appendix, and gastritis apparently predispose to ulcer. As far as eating habits are concerned, a greater risk of ulcer comes from hurried and intemperate eating rather than from the quality of the food eaten. Long intervals between meals and eating when fatigued, worried or angry are almost certain to invite ulcer. Anaphylaxis in certain individuals may explain ulcer production. All persons, especially the ulcer susceptible type, should be advised to forego destructive emotional extravagances—fear, anxiety, anger and "ordinary perverseness." They should feel free to eat what agrees with them but avoid eating when fatigued or in a bad state of mind, should rest after eating and not subject their nervous system to the effects of too great application of the mind and too little manual activity. Elimination of acidity is not the last word in the treatment of ulcer. Patients with ulcer, as surely as those with diabetes, tuberculosis or pernicious anemia, are candidates for future trouble unless physicians and surgeons remember that the disease "may be arrested but not cured."

Treatment of Portal Cirrhosis. Many different factors acting either singly or in combination may produce an increase in the amount of fat in the liver. A high-fat diet, for example, will produce a permanent increase in contrast to the temporary increase produced by fasting. The chronic fatty infiltration of the liver reported in pancreatectomized dogs and some patients with diabetes is well recognized. Extracts of the anterior pituitary will produce a fatty liver. It is generally accepted that an undue increase in the amount of fat present in the liver will contribute to the development of cirrhosis. Conversely, an increase in the amount of protein or carbohydrate in the diet usually decreases the amount of fat in the liver. Choline, pancreatic extract or lipocaic will prevent the accumulation of fat due to a high-fat diet and so prevent the development of cirrhosis. Evidence is being accumulated that dietary factors other than the relative amounts of carbohydrate, protein and fat in the diet affect the liver. When young rats were kept on a diet devoid of vitamin B but supplemented with thiamin, riboflavin and pyridoxine they showed evidence of hepatic injury. An excess of cystine in the diet has been shown to produce acute hepatic necrosis and the addition of extra cystine to the experimental diet of rats accentuated the development of cirrhosis. Yeast or choline prevented the cirrhosis even though extra cystine was fed. Cirrhosis has been produced in rats by the use of a diet low in protein and fat with added cystine. Not only may cirrhosis of the liver be produced in experimental animals by dietary means but it has been shown that dietary deficiencies render the liver more susceptible to the effects of various toxic substances. Deficient diets similar to those producing cirrhosis render the animals more susceptible to cancer of the liver. The relative importance of these two factors of excess fat and vitamin deficiency in the production of cirrhosis is not established at the present time, but their importance in treatment has been established.

Hyperbilirubinemia. Hyperbilirubinemia of moderate degree is frequently encountered in gastro-intestinal patients. It may be due to obstructive jaundice, hemolytic jaundice, toxic hepatocellular disease and incipient liver-spleen disease. In a small group of cases idiopathic hyperbilirubinemia must be considered.

Liver Dysfunction. Liver disease and liver dysfunction are becoming increasingly prevalent. Any chronically deficient diet may lead eventually to liver disease. The American dietary is reported deficient in the vitamin B complex. One might assume that the recent enthusiasm for the intake of concentrated vitamin preparations might have counteracted this. However, two factors have nullified to a large extent the possible beneficial effect of

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increased vitamin intake: (1) Concentrated vitamin preparations are relatively expensive, and those who can afford to take them get an adequate amount in their diet, anyway. (2) A large proportion of commercial preparations do not contain the whole vitamin B complex—are apt to be rich in thiamin and nicotinic acid but poor in the other factors. There is some evidence to show that this disproportion can do harm as well as good. The desire for "sylphlike" figures has undoubtedly induced lowering of the carbohydrate intake. Man has enough carbohydrates or sugars in reserve to last only about one-half day. A certain amount of carbohydrate is essential in the diet if one is to avoid abnormal use of body fat. The hyperlipemia brought about by deficient carbohydrate intake leads to deposition of fat in the liver, producing fatty cirrhosis. Therefore, not only is the glycogen reserve of the liver depleted but the fatty replacement impairs normal liver function. Since an important function of the liver is detoxicating, toxic substances passing into it from the digestive tract may damage it further, owing to lowered local tissue resistance. These substances may even pass into the general circulation, where in turn they set up tissue changes which interfere with normal metabolism and may even lead to retrogressive changes. One may postulate that some of the noninfective types of arthritis may be related to this pathologic function.

External Use of Cod Liver Oil. The mechanism of any local action which cod liver oil may produce remains unknown. Most clinical reports have assumed on an empiric basis that the activity noted was due to the vitamin content of the oil. There is a significant number of clinical reports favorable to the use of cod liver oil ointments in the local treatment of burns of all types, of wounds and of ulcers. Burns in the "indolent stage" and indolent ulcers are said to be especially benefited by local cod liver oil treatment, when dressings are left in place 48 hours. Most workers are agreed that local infection diminishes, necrotic material is liquefied and growth of granulation tissue and epithelization are stimulated. Unfortunately there is a surprising and regrettable lack of control in such studies. The few experimental studies reported are not conclusive; indeed, the more recent and better controlled work on animals has failed to show any advantage of cod liver oil ointment over other ointments. The therapeutic constituents of cod liver oil aside from vitamins are still unknown. The concept that the possible stimulating properties of cod liver oil rest in its vitamin content is purely empiric; studies predicating the bacteriostatic and bactericidal activity of cod liver oil are controversial. Few reports of toxicity from the use of cod liver oil ointments have appeared. Such ointments can serve the function of a stimulating ointment and several reports attest their beneficial effect on indolent ulcers. However, their use should not violate recognized surgical principles nor obviate the necessity for early and careful skin grafting or of other recognized medical agents for the treatment of burns and wounds.

Diet of the Older Worker. While we do not know what may be the optimum diet for optimum efficiency at any age, we do know enough to say with certainty that the older worker will keep most fit by eating enough good food to avoid underweight and avoid eating so much food as to become obese. Life insurance statistics show clearly that definite underweight as well as definite obesity shortens the life-span. Common experience demonstrates that both impair physical endurance and performance. It is not difficult to understand why ingestion of food to the point of obesity is injurious to people with reduced factors of safety in the matter of insulin, pancreas, sugar and fat metabolism. Such dietary excesses damage by overwork already impaired mechanisms. But in the absence of diabetes, actual or incipient, why does obesity, maintained for years, initiate or aggravate cardiovascular, renal and other disorders that shorten the life-span? While the answer to these questions is being sought by experiments and accurate observation on mice and men, prevention of obesity in all workers past 30 appears to be a prophylactic imperative, a must. We know that the digestive secretions decline with age. The frequency of achlorhydria rises gradually in the population even past 30. What this means in the way of diet and nutrition of the older worker is not yet known. There can be little doubt that persistent, bad food habits will induce increasing impairments with the added years. The lower basal metabolic rate may call for fewer calories (less fats and starches) for men and women past 60 or 70, but the need for proteins, minerals and vitamins does not seem to be correspondingly reduced.

Nutrition in Industry. From the scientific point of view there are two aspects to the problem of nutrition in industry: the determination of new facts through research on the effect of specific nutrients or groups of nutrients on the health and productivity of workers; and the application of known principles of diet to the special population group represented by the employees of a war industry. It is regrettable that some investigations of the effects of the administration of vitamins or other ingredients of food have been made without sufficient attention to the diet of the subjects. It is only by appraisal of the diet that a suitable experiment on human nutrition can be formulated. Workmen may be living in an unusual environment for many hours of the day and the question arises whether their dietary requirements might not be greater than normal.

A dietary survey provides only an indication of the probable nutritional status of the workers in terms of some standard; at best it is difficult to carry out and equally difficult to interpret. Huenemann and Turner have found considerable discrepancy between dietary intakes computed first according to diet histories obtained by questioning the patient and, secondly, according to diet records obtained by weighing all portions of food eaten over periods of 10 to 14 days repeated every 3 or 4 months for a year. There is a difference between dietary adequacy and nutritional adequacy. The first involves an evaluation of the foods consumed; the second, a medical evaluation of the nutritional status of the patient.

Facilities for Feeding Workers. Another current nutritional activity in industry relates to the examination of plant facilities for feeding workers. Industrial physicians whose plants maintain cafeterias, dining rooms, canteen wagons or food dispensing machines can do much to advance this line of work. They can make certain that these facilities are under the immediate supervision of persons competent in the science of nutrition, "particularly the application of that science." Too often such facilities are turned over to a concessionaire whose chief objective is to show a profit, and "extremely few" of whom have been found to know anything at all about relative food values.

"Competent nutritionists" working under the supervision of the industrial physician and instructed to make the appropriate changes in methods of cooking and food handling can do much to remedy this situation and "make the plant's facilities for feeding workers do what is expected of them." Incidentally, it is remarked "that the physician who undertakes this line of work will acquire from his nutritionist quite an education in practical food matters." Underneath this question of improving the nutrition of industrial workers lies the fundamental problem of education in matters of food and nutrition which can be accomplished in part through efforts made by the plant itself and in part through general community, state and national effort.

American Diets. Much of this article is based on literature already familiar to the dietitian. Trends in food consumption, factors affecting food consumption levels, and

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diet in relation to income, size of family and income, and management practices are discussed. Included are heretofore unpublished data concerning comparison of nutritive value of food estimated to be delivered to the nation's kitchens in two 5-year periods, with the 1941 dietary recommendations of the National Research Council's Committee on Food and Nutrition. The dietary situation in the early 1940's is compared with the middle 1930's. The author states that "there are reasons to believe that diets in the United States were better in 1940 and 1941 than 5 years earlier." She believes that factors influencing this have been an increasing public interest in nutrition; the dietary reinforcements of special foods; food distribution programs including school lunch programs; and of course higher wages. Increased consumption was most noticeable with regard to fruit and fresh vegetables; the consumption of meat and eggs was 8 to 10% higher but of dairy products less than 5% higher. The author adds, "Whether in the war year 1942 the dietary gains of the recent past can be maintained or accelerated and improvements in still other directions initiated, time alone will tell. Enormous quantities of food are needed for our own civilian population and armed forces and for those of other countries resisting aggression. Unless enough food of the right kind is produced, dietary levels will fall."

Diabetic Neuritis. Seven cases of diabetic neuritis were studied before and after therapy with thiamin hydrochloride. In none was any improvement noted; in two, progression of the neurologic syndrome occurred. Evidence indicates that in diabetic neuritis the metabolism of vitamin B_1 does not vary significantly from the normal.

Enriched White Flour. Based on experimental results with 2 groups of adult human subjects, one of which was maintained for 9 months on a diet in which a non-enriched flour contributed 30% of the calories, while the other group was maintained on an identical régime except that the flour quota was an enriched flour, "the conclusion seems to be fully justified that a flour which contains, as a minimum, 2.0 mg. thiamin and 15.0 mg. niacin per pound (454 gm.) with 6 parts per hundred of nonfat milk solids is nutritionally a satisfactory food." It would appear that the average American diet, when its flour quota is plain, unenriched white flour, provides an insufficient amount of thiamin except when its foods other than its content of flour and sugar are selected with greater care than probably is customary. Restorative wheat levels help greatly to correct this defect, whereas comparable enrichment with riboflavin, namely to whole wheat levels, will not correct the deficiency of the average diet in riboflavin.

JOURNAL OF AVIATION MEDICINE

Vol. 14, February 1943

*Medical problems in the RCAF. J. W. Tice.—p. 4.

Nutrition in the RCAF. After assays, the RCAF medical staff concluded that due to great vitamin loss in cooking, the margin of safety in the ration was not sufficient. The ration was improved and experienced dietitians were placed in charge of the messing service. There was a dramatic improvement in appearance and palatability of food served. Evidence of gingival manifestations of avitaminosis C, and of corneal vascularization as an index of riboflavin deficiency was found in flying personnel.

JOURNAL OF BIOLOGICAL CHEMISTRY

Vol. 147, February 1943

*Influence of linoleic and palmitic acids of the diet on synthesis and storage of fatty acids in the white rat. F. E. Visscher and R. C. Corley.—p. 291.

*Liver glycogenesis and fasting in the rat. J. J. McBride.—p. 333.

*Studies on the metabolism of zinc with the aid of its radioactive isotope. I. The excretion of administered zinc in urine and feces. G. E. Sheline, I. L. Chaikoff, H. B. Jones and M. L. Montgomery.—p. 409.

*Studies on the hemorrhagic sweet clover disease. XI. Hypoprothrombinemia in the rat induced by salicylic acid. K. P. Link, R. S. Overman, W. R. Sullivan, C. F. Huebner and L. D. Scheel.—p. 463.

Synthesis and Storage of Fatty Acids. The kinds of fatty acids stored by the rat were essentially the same on a diet low in lipids as on this diet supplemented with 5% palmitic acid, with or without addition of linoleic acid.

Liver Glycogenesis and Fasting. When rats are fasted for 36 or 48 hours and then fed glucose for 12 hours, there is no increase in the nonglycogen liver solids at high glycogen levels. There appears to be a loss of these solids which increases with an increase in the length of fast. In some rats, feeding large amounts of glucose may result in disturbance in the water balance even though diarrhea does not occur. Following a 36-hour fast, it is essential cell constituents and not storage materials which are lost by the liver.

Metabolism of Zinc. Results indicate that a large fraction of the body zinc is eliminated by way of the gastrointestinal tract.

Hemorrhagic Sweet Clover Disease. Single doses of salicylic acid induce a temporary prothrombinemia in rats when the rats are maintained on a ration low in vitamin K. This does not develop when the diet contains vitamin K. Synthetic quinone protects the rat against the hypoprothrombinemia-inducing action of salicylic acid. Apparently there is a parallelism between this type of hypoprothrombinemia and the hemorrhagic sweet clover disease.

JOURNAL OF NUTRITION

Vol. 25, February 10, 1943

*Studies on cartenoid metabolism. III. The effect of a high vitamin A diet on the cartenoid metabolism of chickens. F. H. Mattson and H. J. Deuel, Jr.—p. 103.

*Choline and pyridoxine as factors in prevention of epithelial hyperplasia in the forestomach of rats fed white flour. G. R. Sharpless and M. Sabol.—p. 113.

*Goitrogenic action of calcium and vitamin D. G. R. Sharpless, M. Sabol, E. K. Anthony and H. L. Argetsinger.—p. 119.

*The critical temperature for the albino rat as affected by feeding. A. Black and R. W. Swift.—p. 127.

*The role played by the gastrointestinal tract in the absorption and excretion of riboflavin. H. Selye.—p. 137.

*The retention of vitamins in meat during cooking. J. M. McIntire, B. S. Schweigert, L. M. Henderson and C. A. Elvehjem.—p. 143.

*Experiments upon the significance of liberal levels of intake of riboflavin. L. N. Ellis, A. Zmachinsky and H. C. Sherman.—p. 153.

*Reproduction and lactation of mice on highly purified diets. C. Foster, J. H. Jones, F. Dorfman and R. S. Kobler.—p. 161.

*The effect of protein and B-vitamin levels of the diet upon the tissue content and balance of riboflavin and nicotinic acid in rats. H. P. Sarett and W. A. Perlzweig.—p. 173.

*Renal threshold for ascorbic acid in twelve normal adults. J. S. Lewis, C. A. Storvick and H. M. Hauck, with the cooperation of I. Patterson, S. Higano and B. Hawthorne.—p. 185.

*Utilization of urea by young calves. J. K. Loosli and C. M. McCay.—p. 197.

*Fat metabolism and goiter. R. E. Remington and P. L. Harris.—p. 203.

Vitamin A and Cartenoids in Chicks. The lowering of the cartenoid pigments in the blood and livers of chickens following the administration of a high-vitamin A diet is greater than that in the blood or milk of cows on a similar dietary régime. This is not caused by failure to absorb similar amounts of cartenoids, but must be attributed to more rapid destruction. There is evidence of toxic action of large doses of vitamin A, in the form of shark liver oil, to 2-week-old chickens.

Choline and Pyridoxine and Epithelial Hyperplasia. Choline and pyridoxine are necessary to help maintain normal epithelium in the forestomach of rats fed diets in

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And at other laboratories still other Borden scientists adapt these research findings to new products or improvements of old products, for consumer use. Finally, *control laboratories* guard the purity and uniformity of every Borden food throughout every step of manufacture.

This explains why we believe our doctor friends may have entire confidence in any product bearing the Borden name . . . whether fluid milk, ice cream, evaporated milk, Hemo, cheese, or special purpose milks for infants. The Borden Company, 350 Madison Avenue, New York City.

BORDEN—*"Better nutrition through research"*

which cystine and white flour furnish the only source of protein. Calcium pantothenate does not improve such diets. Results of work with taurocholic acid suggest that regurgitated bile in the stomach may be a cause of these lesions and that choline helps prevent regurgitation of bile by stimulating the smooth muscle of the intestinal tract.

Calcium and Goiter. When other factors are constant, evidence indicates that calcium does not influence the size of the thyroid gland. Along with vitamin D, calcium chloride can act as a goitrogenic agent. Results suggest that chloride causes some loss of iodine which is followed by an increase in thyroid weight when an excess of calcium is absorbed.

Critical Temperature for Albino Rat. It is not concluded from this investigation that critical temperature of the environment for animals in general is unaffected by feeding.

Riboflavin Absorption and Excretion. Experiments in the rat indicate that following bilateral nephrectomy, intravenously administered riboflavin is rapidly excreted into the small intestine, especially the duodenum. Excretion through the bile plays no important part in elimination of this vitamin. Destruction of riboflavin proceeds slowly, if at all, in an isolated loop of the duodenum, but quickly in the isolated large intestine. If riboflavin is directly injected into the isolated lower small intestine it is more rapidly absorbed from this site than it can be destroyed. Whether any destruction occurs in this segment is uncertain but the absorbed vitamin rapidly reappears in the duodenum. In the complete absence of the intestinal canal and both kidneys the tissues of the rat cannot destroy or eliminate any significant percentage of large doses of intravenously injected riboflavin.

Vitamin Retention in Cooked Meat. The average thiamin retention in pork meat is 70% after roasting and broiling, and 50% after braising; 85% for nicotinic acid after roasting and broiling, and 65% after braising; 85% for riboflavin as a result of any of the cooking methods. Total retention in the meat plus the drippings is about the same for all methods, an average of 70% for thiamin and at least 90% for riboflavin and nicotinic acid. Appreciable amounts of each of the vitamins are found in the drippings, particularly from braised loin cuts. A wide variation occurs in the thiamin and riboflavin contents of different pork carcasses, nicotinic acid being more constant.

Effects of Liberal Riboflavin. Experiments with diets, otherwise similar, which contained, respectively, 3, 6.5, and 10 mg. riboflavin per gram air-dry food mixture, were extended through successive generations of laboratory rats. The first of these levels seemed amply to support adult vitality and length of life at the "plateau" of optimal nutritional status with reference to this vitamin. The threefold higher riboflavin intake level of diet III appeared to confer added benefits upon the offspring of these experimental families, as shown by their more favorable growth when continued on the family diet and by their ability to withstand deprivation either of riboflavin or of thiamin.

Reproduction on Highly Purified Diets. Mice have been raised to the fourth generation of offspring on a diet in which all of the vitamins, the essential fatty acids and salts were supplied as chemically pure compounds, the rest of the diet being of highly purified materials. Fertility, measured by the number of litters born and size of litters, was equal to that on a good stock diet, but growth during preweaning period was subnormal and the mortality rate during the same period was higher than that of stock animals. This would indicate that the diet used was not adequate. This particular type of deficiency may be an unknown substance, an inadequate amount of one or more of the known dietary essentials or an imbalance of these known essentials. It appears that 2% liver extract will not completely correct the inadequacy of the diet.

B Complex-Protein Balance in Rats. Concentration of riboflavin and nicotinic acid in the carcasses of rats was not affected by either minimal and high levels of B-vitamin complex or low and high-protein content of the diet. In the liver, concentrations of riboflavin and nicotinic acid varied directly with the level of protein in the diet and were independent of vitamin intake. Concentrations of thiamin in the carcass and liver reflected the level of B-complex intake but were not affected by the level of protein in the diet. Deposition of fat in the liver and body was augmented either by increasing the B-complex supplement or lowering the protein content of the diet; the maximal effect was observed on the low-protein-high-vitamin diet. Balance studies showed synthesis of nicotinic acid by all 4 groups of rats and an economy of utilization of riboflavin by rats on diets low in B-vitamins.

Renal Threshold for Ascorbic Acid. Renal threshold values for ascorbic acid for 12 normal adults ranged from 1.1 to 1.8 mg. per cent. Values for 10 of the 12 subjects were within range of 1.1 to 1.3 mg. per cent. Of 6 subjects receiving 74 mg. ascorbic acid daily for from 12 to 14 days, 3 maintained tissue saturation whereas 3 gave evidence of slight depletion of tissue reserves.

Use of Urea by Young Calves. Calves 2 months old were unable to grow when they were fed a diet containing only 4.4% protein. When urea was added to the diet to give a protein content of 16.2% calves increased in body weight and height at fairly satisfactory rates. Daily feeding of B-vitamins did not increase rate of growth or efficiency of nitrogen utilization. Riboflavin contents of the organs and edible meat were not increased by feeding B-vitamins.

Fat Metabolism and Goiter. It seems assured that the function of the thyroid gland is not specifically related to the metabolism of fat, either saturated or unsaturated, at least at levels lower than that which might be expected to produce ketosis.

JOURNAL OF PEDIATRICS

Vol. 22, February 1943

*Nonspecific therapy in anterior poliomyelitis. S. Stone.—p. 142.
Assessing the physical condition of children. II. Simple malnutrition: A problem of failing growth and development. N. C. Wetzel.—p. 208.

Vitamins in Treatment of Poliomyelitis. It is suggested that whole vitamins B and E and artificial fever are nonspecific in their mode of action but they represent the most valuable adjuncts in treatment of anterior poliomyelitis in the acute and subacute stages of the disease. They probably assist in regeneration of neurons partially affected by the virus, improve the patients' general sense of well-being, and assist in prevention of excessive fibrosis, a frequent cause of deformities and contractures.

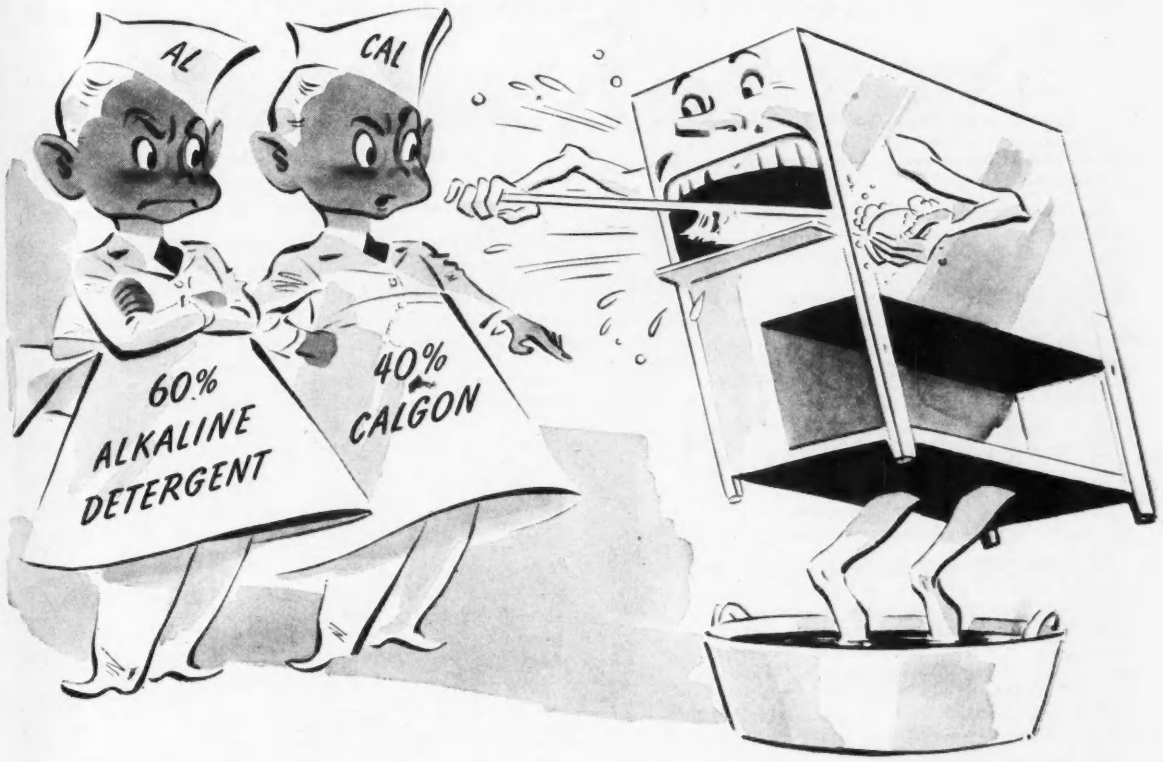
PUBLIC HEALTH NURSING

Vol. 35, February 1943

*Nutrition in public health nursing. M. J. Dunn.—p. 82.
*The newer knowledge of malnutrition. J. C. Dwight.—p. 87.

Nutrition in Public Health Nursing. In the Public Health Nursing Curriculum Guide, a complete chapter is devoted to a comprehensive outline for teaching nutrition. The aim is for better understanding of existing knowledge and trends in the field of nutrition, essential to effective public health nursing performance and understanding of the public health aspects of nutrition, and ability to apply this knowledge.

Malnutrition in Nurses. Practically all members of a selected nursing group showed evidence of some chronic deficiency of all vitamins tested. Vitamin C deficiency was found to be the most prevalent as well as the most severe deficiency present. Of the group, 27% fell below normal in hemoglobin values.



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PUBLIC HEALTH REPORTS

Vol. 58, February 19, 1943

*The toxicity and histopathology of some azo compounds as influenced by dietary protein. M. I. Smith, R. D. Little and E. F. Stohlman.—p. 304.
Report of market-milk supplies of public health service ordinance communities.—p. 320.

Diet and Toxicology of Some Azo Compounds. Both the hyaline degeneration of the liver and anemia produced by azobenzene and p-aminoazobenzene are preventable by high dietary protein. The structural and functional liver damage produced by p-dimethylaminoazobenzene is favorably influenced by inclusion of a high percentage of casein in the diet, but not by yeast protein or gelatin. Egg white protein has greatly reduced the extent and incidence of both hepatic cirrhosis and carcinomatosis within an experimental period of 112 days. The nature of the detoxifying action of egg white protein is not known, though it is possible that it may be due to its avidin content which activates biotin.

SCIENTIFIC MONTHLY

Vol. 66, February 1943

*Recent advances in our knowledge of the vitamins. C. A. Elvehjem.—p. 99.

Vitamins. Vitamin requirements can be expressed in chemical terms to a greater extent now than ever before. Beginnings have been started to eliminate nutritional disorders; synthetic vitamins are not the solution, but a set of useful tools. Extreme vitamin deficiencies respond dramatically to synthetic vitamin therapy. Nutrition workers seek to prevent such deficiencies through a thorough knowledge of vitamin distribution in foods. Synthetic vitamins in food fortification are buffers for sudden changes of availability in natural foods. The decade 1930–40 will be considered that in which greatest progress was made on the chemistry of vitamins; let us hope that 1940–50 will be the period of most practical application.

SOUTHERN MEDICAL JOURNAL

Vol. 36, February 1943

*The incidence and recognition of riboflavin and niacin deficiency in medical diseases. G. A. Goldsmith.—p. 108.
*Magnesium in thyroid disease. Editorial.—p. 160.
Short time vitamin deficiencies. Editorial.—p. 160.

Riboflavin and Niacin Deficiency. Of 200 patients admitted to medical services of a charity hospital, 40% showed definite and 67% probable evidence of deficiency of niacin, riboflavin, or both. Changes in the tongue were the most common abnormal findings, while lesions of the skin, eyes and lips occurred in that order of frequency. Severe and characteristic manifestations were found more often in white than Negro patients. Signs of deficiency were present in all persons with hyperthyroidism, cirrhosis of the liver and chronic alcoholism, and in two-thirds or more of the patients who had infections, diabetes mellitus, carcinoma, and diseases of the gastro-intestinal tract. Inadequacy of riboflavin appeared to be the most frequent cause of deficiency disease in this locality (New Orleans).

Magnesium in Thyroid Disease. One of the most important activities of the thyroid may possibly be its control of magnesium metabolism during growth. Magnesium exists in the serum in two forms, filtrable and nonfiltrable or bound. Bound magnesium is consistently above the normal range in hyperthyroidism. Eventually magnesium analysis may be of more diagnostic value than determination of basal metabolic rate. There is an increased renal excretion of magnesium in hyperthyroidism

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BAKERS' HELPER

Vol. 79, February 13, 1943

*OPA sweet goods price regulation. W. Werble.—p. 23.
How to maintain bakery floors.—p. 39.
Delicious individual pastries within today's restrictions. J. A. Lambeth.—p. 54.

Vol. 79, February 27, 1943

*Metallizing—the modern blitz on waste. C. C. Swearingen.—p. 26.
*Bread baked by tons at new Navy bakery.—p. 29.

Bakers' Prices. Producers, wholesalers, wagon sellers, and retailers of cakes, pastries, sweet yeast-raised goods and pies must recalculate their maximum selling price on each of these commodities within 60 days after February 13. The hope is to help the small baker who has been squeezed between the prices paid for raw foods and the ceiling prices of March. The baking industry is heartily endorsing the proposals of the Food and Nutrition Board for increased levels of bread enrichment, inclusion of riboflavin as soon as possible, mandatory enrichment of all family flour, and the increase of maximum ingredient contents provided in the bread order to 4% for shortening and 6% for sugar and dry milk solids. Since synthetic vitamin supplies are included in WPB Chemical Branch and food regulations under the Department of Agriculture, new regulations for bread enrichment may be delayed.

Metallizing. A new but proved spray process replaces metal on worn, scored or rusted surfaces and is known as "metallizing." A variety of metals can be processed including aluminum, bronze, steel, monel and stainless steel. The process prevents costly delays waiting for replacement parts and results in a more durable product. The price varies widely with the amount of spray material required, the labor and the shop profit but operators claim it ranges from 30 to 80% of the cost of replacements. Well-equipped metallizing shops are located in the larger cities.

Navy Bakery. One of the nation's newest and largest complete bakeries has been in mass production since early in 1942 at the U. S. Naval Training Station, San Diego. The navy trains its bakers to be specialists by a policy of "analysis for improvement." Consistent high quality is maintained by records of every run and daily inspection. Charts are kept on machine and oven performances to maintain peak efficiency at all times. Advice and suggestions for improvements are constantly sought from the nation's leading bakers and cooks. All machines are equipped with safety devices. Oven heat is thermostatically-controlled. A cookie cutter supplies the correct amount of dough for each cookie and places it properly in the pans; pans are greased and cleaned automatically; flour-sifting and dispensing devices on overhead assembly lines gauge the correct amount of flour to be put into the dough-mixing machines. Separate rooms are maintained for mixing, fermentation, proofing and storing the products.

BUILDINGS AND BUILDING MANAGEMENT

Vol. 43, February 1943

Percentage leases in wartime. C. M. Jones.—p. 13.
*12 tips on cutting the cost of brushes and cleaners.—p. 33.

Vol. 43, March 1943

Systematic conservation of fuel and utilities. R. L. Nelson and W. O. Campbell.—p. 15.

Cleaning Costs. A dozen tips are given for building service employees concerning the proper care of brushes and the conservation of cleaning materials to minimize waste of war-restricted products.

Brand new... Ready now!

"THIS, TOO, IS SABOTAGE"

★

Use this new sound movie in your Nutrition Program

This dramatic, educational film shows how the deadly saboteur, Malnutrition, casts its sinister shadow across war-working Americans. Then it explains in graphic detail how balanced meals and proper diet will help improve the health of the nation.

This picture features the essential food groups recommended by Government and nutrition authorities. It portrays in colorful, narrative form the vital necessity of including items from each of these groups in each day's meals. It shows easy ways to insure a properly balanced diet, in spite of wartime food limitations.

Here is a fast-moving, timely motion picture to emphasize the all-important nutrition story. "This, Too, is Sabotage" was especially designed for showing to educational and consumer audiences in schools, colleges, club programs, rural groups, nutrition meetings, etc. Running time: 25 min. Loaned free. Film size: 16 mm. with sound. Mail the coupon today to be sure of choice booking dates!

Tune in on John Charles Thomas, Westinghouse Program, NBC, Sunday at 2:30 P. M., E. W. T.

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CONSUMERS' GUIDE

Vol. 9, February 1943

*School lunches must go on.—p. 13.

School Lunches. The liquidation of WPA is creating problems of food, equipment, and technical and administrative help in the feeding of school children. The following steps should be taken by the state nutrition committees to assure school lunches: Find out the present status of school lunch programs; consider the appointment of trained supervisors to the staff of the State Department of Education; recruit volunteers for school lunches, gardens, and canning projects; interest teachers in extension and summer courses in the managerial aspects of school lunches, gardens, and food conservation; look into statutes in your state and see if school funds can be used; and try to get the local school district officials to plan their budgets with school lunches in mind.

FOOD INDUSTRIES

Vol. 15, March 1943

*How potato shreds are made.—p. 47.
*Choose floors that withstand conditions of processing. R. Kanegsberg.—p. 58.
*Control of thermophilic bacteria in canned meat mixtures. L. B. Jensen and W. R. Hess.—p. 66.
*Quality and profit in a nickel's worth of cup cake. W. R. Van Meter.—p. 68.
*Dehydrated bortsch.—p. 74.
*Introducing "Bruceets."—p. 77.
*Meal for meatless days.—p. 77.
*Butter that won't melt.—p. 82.
*Coffee tablets.—p. 105.
*Thiamin and riboflavin in wheat germ.—p. 119.
*Stabilization of fats.—p. 119.
*Canned and powdered milk.—p. 119.
*Glazing in quick freezing.—p. 120.

Potato Shreds. Potato shreds are dehydrated, cooked Idaho potatoes which are prepared for use by soaking in an equal volume of boiling water for 5 min. and then whipping into fluffy, mashed potatoes; 1 lb. yields 5½ lb. mashed potatoes. In the manufacturing process the potatoes are washed, blanched, peeled, inspected, cut, cooked, shredded through ricers, dehydrated and packed in 5-gal. tins holding 10 lb. net. A two-stage dehydration method is used. Potatoes travel down a hot air tunnel on trays and then are put on a belt which carries them through the same tunnel. At present, Army and Navy orders are so large that regular trade orders have been discontinued for the present.

Suitable Flooring. Floors kept in good condition will reduce the effort needed to move goods about and so help the labor situation. When new floors are selected the following qualities should be considered: chemical resistance, absorption, slip-proof, cleanability, sound-proof, economic cost, and resistance to heat, cold, or chemicals, and finally, durability. All floor materials have weak and strong points. The final selection of material should be based upon need. Hardwood floors are inexpensive, easily obtained and installed but are affected by alkalis, acids, and excessive water. Waterproofing is available but is not fool-proof in situations entailing excessive moisture. Linoleum and rubber are affected by heat, oil and fat, and resist periodic washing, but may swell under constant wetting and will not support concentrated loads. Concrete, which is alkaline, is not usually affected by mild alkalis but salts in solution will prove injurious and may even penetrate through to steel floor reinforcements. Protective coatings are available which should be carefully studied to see which one is best suited to particular needs.

Thermophilic Bacteria in Canned Meats. Canned meat mixtures which contain soybeans and soy flour, grits or meal, will spoil due to the thermophilic spore-forming bacteria in these extenders. Studies made at the Swift laboratories show that contamination will not take place if meat is cured with 3½ lb. sodium chloride, 2½ oz. sodium nitrate, and ⅛ oz. sodium nitrite per 100 lb., placed in 6 lb. cans and retorted at 235° F. for 3 hrs. 20 min. after evacuating and sealing.

Chocolate Cup Cakes. Chocolate cup cakes, packaged two for 5 cents in a glassine wrapper, were first used only as an outlet for the broken cake left at the end of the day, but the demand grew so that they now form the mainstay of the business. The cakes are unique in that an essential ingredient in the formula is "breakage paste" made from broken cake, sugar, cornstarch, skim milk, and condensed milk, which gives a tastier, richer eating cake with improved keeping qualities. The breakage paste must be as uniform as possible by using the correct flour with the right method and keeping the temperature and density of the batter at specified limits. Cup cake tins with cups joined together with ribs are most satisfactory.

Bortsch. Russian bortsch, containing beets, cabbage, onions, powdered milk, cornstarch, granulated beef extract, salt and spices, is being prepared in dehydrated form by the Dry Pack Corporation, New York.

Bruceets. "Bruceets" are undiluted juices of fruits and vegetables processed to form hard, rectangular, candy-like tablets. The mineral content is similar to that of the original food and "there is a negligible vitamin loss."

Meatless Meal. "Simple Simon Vitamin Dinners," containing 6 oz. semolina spaghetti, 1 oz. Argentine Parmesan cheese and ½ oz. dehydrated vegetables, can be prepared in 7 min. Sufficient for 4 people.

Butter. A "butter" containing 60% butterfat, 20% beef fat and 20% dried milk, which will not melt at 105° F. is now available for use in torrid climates.

Coffee Tablets. Combinations of dextrine and dextrose are being advocated in order to reduce coffee concentrate to tablet form.

Wheat Germ. One kilogram either of scutellum or embryo of the wheat germ contains about 15 mg. riboflavin. The scutellum comprises 1.5% of the wheat berry, the embryo, 1.2%, and the former contains nearly 10 times as much vitamin B_1.

Stabilization of Fats. Gum guaiac is a practical and effective stabilizer for lard. When incorporated in paper liners of lard and shortening cartons, it retards rancidity for 3 to 6 months.

Canned and Powdered Milk. Under the best processing methods, canned and dried milk retain full nutritional value of fresh milk. The uniform composition, freedom from pathogenic organisms and fine casein dispersion make this milk particularly valuable for infants and invalids since it is more easily digested.

Glazing Frozen Products. If moisture-vapor-proof sheets used for packaging frozen foods become scarce, it may be practical actually to glaze the product itself. Suitable mixtures of waxes, fatty material, paraffins, resinous materials and synthetic compounds, insoluble in water and capable of preventing absorption of water or vapors, could be used to form a film coating the product. This method would be especially good for irregularly shaped meats and poultry.

HORWATH HOTEL ACCOUNTANT

Vol. 23, March 1943

*A golden era in menus.—p. 5.
*Merchandise costs under war conditions.—p. 6.

Menus. A study of menus in leading hotels, cafes, and entertainment places in 1910–12 presents an amazing contrast to those of today. At that time French was the universal menu language, and a dollar was paid for a lavish meal of many courses. That was the golden era in menus. History may repeat itself, but not until years of economizing in all foods have restored the devastated countries of the world to full productivity.

Why more and more people are using

NABISCO 100% BRAN

for relief of constipation due to insufficient bulk

IT'S GENTLE ACTING . . . the fibers of Nabisco 100% Bran are Double-Milled, by a special improved process, to make them finer, less likely to be irritating.

IT'S DELICIOUS TO EAT . . . Nabisco 100% Bran is tasty, enjoyable as a cereal or in muffins. Even hard-to-please people praise this pleasant way of getting necessary food bulk daily.

IT'S HIGH IN MINERAL CONTENT . . . made of the whole bran, Nabisco 100% Bran is especially rich in Iron and Phosphorus and is an excellent source of Vitamin B_1.

IT'S EASILY AVAILABLE . . . food stores everywhere sell Nabisco 100% Bran in handy one pound and half-pound packages. Moderately priced, it's one of the most desirable and inexpensive bulk foods.

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Merchandise Costs in War. In a study of percentage increases and decreases by months of merchandising costs since 1937, no definite trend in food cost is indicated. A decrease during 1937–39 tapered off in 1940. In 1941 market advances brought the total cost per dollar sale up 3%. In 1942 the first 3 months showed considerable rises but an effective curb resulted in a 1% reduction. In 1942 the food cost per dollar sale corresponded to 1937 although the U. S. Wholesale Food Price Index was 25% higher. Strict control over costs and studious effort to adjust menus and prices to the higher market and food restrictions will be necessary this year to prevent further rises in food costs per dollar sale.

HOSPITAL MANAGEMENT

Vol. 55, February 1943

*Compare hospital food buying with huge task of U. S. Army.—p. 46.
*As meat grows more scarce stretch flavor with sauces.—p. 87.

Army Food. To provide the 5½ lb. food the average soldier eats daily, the Army purchases 15,000 tons of food a day at a cost of $2,800,000 or 56¢ per soldier. The ration includes meat, or meat substitute, 16 oz.; eggs, 1; butter and other fats, 2½ oz.; grain products and cereals, 12 oz.; milk, 1 pt.; Irish potatoes, 12 oz.; tomatoes and citrus fruits, 4 oz.; leafy green and yellow vegetables, 7 oz.; other fruits and vegetables, 12 oz.; sugar, 3 oz.; desserts and salads make up the remainder of the 5½ lb. A soldier receives coffee 40 times in 30 days.

Meat Extenders. Use sauces and gravies wisely. The added flavor of a good sauce can disguise a dish to such an extent that the shortage of meat is not even noticed. Liquids used in making these sauces are meat juices, tomato juice, or the liquid drained from cooked vegetables. Lists some of the most popular spices and herbs and simple methods of preparing gravy.

HOTEL MANAGEMENT

Vol. 43, February 1943

*Multiple management for successful hotel operation.—p. 30.

Hotel Management. The Hotel Commercial, Yakima, Washington, is successfully operating under a plan in which the employees, through a Junior Board of Directors elected every 6 months, make constructive suggestions for improvements in operation. After the Senior Board passes on these recommendations they are put into effect. In 5 months of trial 87 proposals were made and only 5 discarded as impracticable. The end results were decreased turnover of employees, increased output of work because the employees now share in profits, decreased operating expense and a 26.8% profit increase.

ICE CREAM TRADE JOURNAL

Vol. 39, February 1943

*Ice cream rationing under FD Order 8.—p. 8.
*Producing sherbets for new volume. B. I. Masurovsky.—p. 14.
*Wartime mixes. P. H. Tracy.—p. 16.
*War rulings affecting the ice cream industry. B. Terhune.—p. 18.

Rationing. FD Order 8 restrictions include: Limitations of total milk solids to 65% (22% of which may go into ice cream) of that used by civilians during the base period; maximum ratio of 8 parts milk solids to 10 parts milk fat; 10% limitation on the total milk solids used in manufacturing frozen dairy foods other than ice cream; and "equitable distribution" corresponding to the base period. The 1943 volume of business will equal 65% of 1942 civilian sales, plus sales to armed forces, due to added gallonage from sherbets and as a result of "stretching" the milk solids quota.

Sherbets. Milk sherbets differ from water ices in that they contain 5% milk solids. The content of milk solids is only one-fourth that of ice cream; the amount of sweetening is less than in water ice. Milk sherbets, therefore, make possible an increased gallonage, require less sweetening, and have a greater overrun. The firmness of sherbets depends upon the sugar content, and amount of fruit used, the sugar available, and overrun taken. A formula for sherbets is proposed.

Wartime Mixes. The search for milk solids replacements has begun. Ice cream of acceptable flavor and body may be made by using vegetable fat, oat flour, powdered wheat germ, corn syrup solids or soybean flour in combination with milk solids. Legal sanction of such procedures will be necessary.

War Rulings. Order revising ice cream prices when butterfat content is substantially lowered as a result of FD 8 is expected. Boxes for direct fill factory-packed ice cream are limited to one pint, one quart and 2½ gallons or larger, in Order L-239. Cups and round-nested containers are exempt. An order setting price ceiling on vanillin is expected; manpower shortage is growing more acute daily; OPA sets emergency ceiling on prices to be paid milk producers with January prices, the highest in 20 years, as the ceiling. OPA defines "fountain fruits" within meaning of price ceilings.

JOURNAL OF HOME ECONOMICS

Vol. 35, March 1943

*Performance of combination range ovens. L. J. Peet and A. Pattison.—p. 168.

Combination Range Ovens. It was found that a combination of two fuels may be used satisfactorily in a kitchen range by preheating with coal, then turning on gas or electricity. Gas ovens require more room for air circulation around pans than do coal ovens. Combination ovens using gas should be large enough to permit a clearance of 1″ between pans and also the oven wall. The oven should be deep enough so that racks can be at least 4″ apart and far enough from top and bottom to permit circulation of heated air. Baking directions must vary with the fuel used. A slightly lower temperature or a shorter baking time is required with coal than with gas or electricity.

PERSONNEL JOURNAL

Vol. 21, March 1943

Executive responsibility—war and post-war. G. L. Wood.—p. 302.
*Temperament in industry. D. G. Humm and G. W. Wadsworth, Jr.—p. 314.
*Good labor standards increase production. W. B. Smith.—p. 323.

Temperament. When workers are scarce, a complete, well-organized selection program becomes more important. The worker's entire personality must be explored. Selection should be based on ability to meet certain standards with regard to the following: background and training; intelligence; skill or aptitude; temperament; physical examination. The program should be streamlined by using group tests, pruning the application blank to absolute essentials, proper routining of completed tests to scoring rooms, and by giving physical examinations only to applicants who have passed all other tests.

Labor Standards. The Federal Wages and Hour Law and the Walsh-Healey Act dealing with labor standards are aiding labor-management cooperation. The Wage and Hour Law applying to employees engaged in interstate commerce limits wages to 30 cents an hour and time and a half for all hours beyond 40 a week. Under collective bargaining agreements employees may work 12 hours a day or 56 hours a week without overtime payment. Persons employed in an executive, administrative, or professional capacity are exempt. The Walsh-Healey Act minimum wage requirements range from 30 to 70 cents an hour with an 8-hour day, a 40-hour week, and time and a half for overtime. The act does not apply to office and supervisory employees, to custodial employees or maintenance workers. Employment of girls between the ages of 16 and 18 is now permitted. Goods supplied on government contract are required to be handled under safe and sanitary working conditions. Both laws exempt employees engaged in agriculture.

No. 959 Roaster and Double Baker Oven

• Essential civilian oven users may now purchase new Blodgett Ovens under Order L-182. See your dealer or local W. P. B. office.

THE DIETITIAN IS A KEY MAN IN TOTAL WAR!

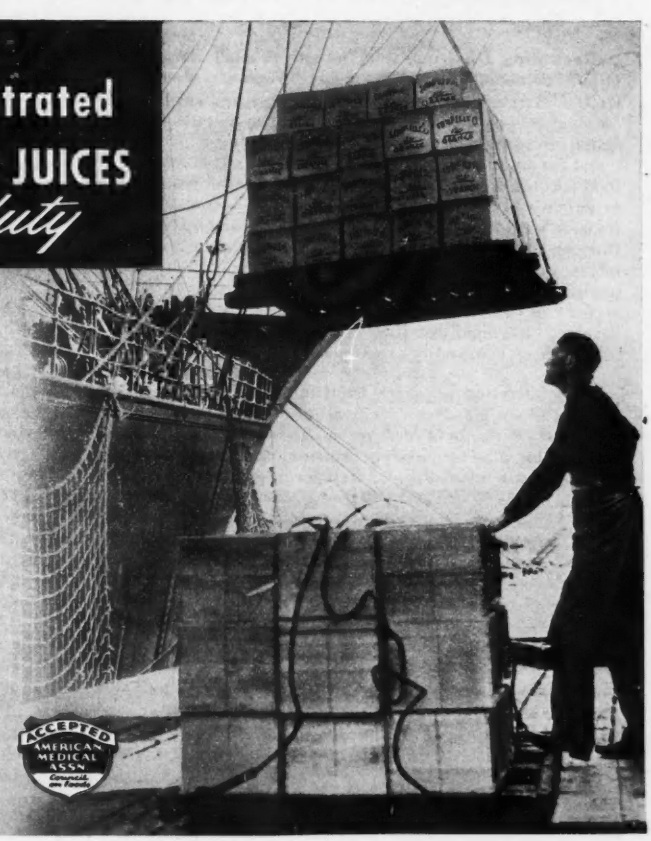
The strategy of a total war starts with the strategist who readies his nation's manpower for the demands of such a war.

Success must rest largely upon the proper planning and preparation of the people's wartime diet.

That is the dietitian's grave responsibility —a responsibility which Blodgett Roasting and Baking Ovens are helping the nation's nutritional experts to fullfill on the home and fighting fronts.

THE
G. S. BLODGETT CO. INC.
53 MAPLE STREET BURLINGTON, VT.

Sunfilled pure concentrated
ORANGE AND GRAPEFRUIT JUICES
. . . now on overseas duty



For our many friends and customers the recent government requisitioning of concentrated citrus fruit juices for the armed services will necessitate the more costly and less convenient use of available fresh fruits. As patriotic Americans, all of us agree that our fighting forces must and will be adequately supplied with the best . . . and that any resultant shortage on the home front will be cheerfully borne.

Whether the present ruling will be modified to permit a limited release of Sunfilled pure concentrated Orange and Grapefruit Juices for hospital and institutional use is unpredictable at this time. Significant, however, is the fact that the true-to-fruit qualities and economy features of Sunfilled products qualify them for this distinguished service . . . further justification of your continued use when present restrictions are lifted.

CITRUS CONCENTRATES, INC.
DUNEDIN, FLORIDA

News Notes

Changes of Addresses. Members of the American Dietetic Association are urged to send to the office of the Association (620 N. Michigan Avenue, Chicago), prompt notice of changes of address. The general tendency to neglect this has necessitated a change of policy. Beginning April 1, the office will accept as authorization to change an address the new address given on any "returned" mail. However, members should bear in mind the fact that many organizations by which members are employed, keep journals and other mail. The only way members can be sure of receiving mail from the Association is by promptly notifying the office of any change of address. A charge to cover the cost of postage and labor will be made for remailing all journals which are returned due to the lack of a correct address.

Constitution and By-Laws Committee. An announcement from Frances MacKinnon, President of the American Dietetic Association, confirms the following appointments to the above committee: chairman, Ann Boller, National Live Stock and Meat Board, Chicago; members, Maxine Turner, Oklahoma State Health Department, and Ethel Ollis, Research Hospital, Kansas City, Kansas.

Recruiting Dietitians for Industrial Food Service and Other Positions. The March issue of *Nutrition News Letter* from ODHWS, concerning the nutrition of industrial workers, suggests a procedure for recruiting the potential professional or experienced personnel to meet the expected demand for administrative dietitians, restaurant managers, or food service directors, as follows: graduate dietitians with experience in commercial or large quantity food service to register with the American Dietetic Association Placement Bureau, 620 N. Michigan Avenue, Chicago (this probably refers only to members of the Association. Ed.); others qualified to fill food service positions in industrial plants to register in the nearest local office of the U. S. Employment Service. Regional nutrition representatives can give helpful advice on the qualifications necessary for such positions.

Hospitalization of Army Dietitians. According to the *Journal* of the American Medical Association for March 13, the War Department has promulgated a hospitalization distribution plan for patients returning to the United States from overseas, providing for transfer to general hospitals in the interior of all military personnel, including specifically Army nurses, dietitians and Waacs, who are to be kept under further observation and treatment. While such transfers will not be made when a break in treatment might retard recovery of the patient, the general policy will be to transfer to general hospitals designated for special cases those persons who require special treatment and to send patients who will be discharged for disability or those who require prolonged hospitalization to a general hospital in the vicinity of their homes. Such transfers will be made, generally, when there are 25 or more such patients.

Symposium on Nutrition. "Nutrition in War Time" was the title of a symposium conducted by the Medical College of Virginia, Richmond, March 25–27. The program included the following subjects: "Nutritional Activities of the Virginia State Department of Health," Dr. J. C. Funk, Director of Health Education, State Health Department; "Nutrition in a Changing World," Dr. W. H. Sebrell, U. S. Public Health Service; "Making Nutrition Vital," Dr. Lydia J. Roberts, University of Chicago; "Victory Gardens as Related to Wartime Nutrition in Virginia," Mr. L. B. Dietrick, State Victory Garden Committee; "Rationing as It Affects Nutrition of the Public," Dr. Virgil P. Sydenstricker, University of Georgia School of Medicine; "Living Under Rationing," Brigadier General J. Fulmer Bright, Director of OPA, Virginia; "Wartime Nutrition in England," Dr. Sydenstricker; "The Teaching of Nutrition to Elementary School Children," Dr. Roberts and Bertlyn Bosley, Teachers College, Columbia University.

Symposium on Nutrition. A symposium on nutrition by twenty-eight national authorities, with an introduction by Dr. Tom D. Spies, appeared in the March issue of *Medical Clinics of North America*, published by W. B. Saunders Company, Philadelphia. Subjects covered include protein and carbohydrate metabolism, vitamin deficiencies, pernicious anemia, nutrition in pregnancy, etc., and the list of authors includes such well-known authorities as Drs. Franklin C. Bing, Robert Elman, Robert Goodhart, Russell M. Wilder, J. Harry Ebbs, and Norman Jolliffe.

Catholic Hospital Association. The Executive Board, Catholic Hospital Association of the United States and Canada, announces a Wartime Conference to be held at the William Penn Hotel, Pittsburgh, June 11–14.

Nutrition in Industry Section, ODHWS. This new section, mentioned briefly in this JOURNAL for April, has charge of the feeding in industry part of the National Nutrition Program. In addition to the personnel in charge of the usual technical, administrative and informative work, it also has an expert assigned to activities in the field of labor education. Twelve special nutrition in industry representatives were appointed to act as assistants in each of the regional offices established by the Nutrition Division of ODHWS. The Nutrition in Industry Section has an arrangement with the Industrial Hygiene Division, U. S. Public Health Service, and the Ordnance Branch, U. S. Army, whereby inspection of meals, feeding conditions and requirements is included in industrial hygiene surveys of Army Ordnance plants. Confidential reports are submitted to the U. S. Army Ordnance. The regional nutrition representatives or assistant representatives are asked to take whatever steps are necessary to remedy feeding problems in communities surrounding ordnance plants.

The section is fostering the formation of subcommittees

No 4 *This is part of a series on matters of professional, educational and public interest, primarily related to nutrition and the scientific approach to the food problem, and giving the background of the products of General Mills. These messages are being disseminated through a number of professional and specialized publications in the hope of providing material useful to the readers.*

Food, Research and War

Some problems Research is organized to solve in one large food company . . . How its normal functions have been multiplied in wartime. . . . A glimpse of what General Mills Research has meant to consumers in the past, and a conviction about the future.

Food research is not merely a well equipped laboratory and a staff of able scientists. It is also a continuing, expanding plan and an organization to carry out the plan. A useful new food product can, conceivably, be the result of somebody's lucky "hunch." But it has infinitely greater opportunity to become an enduring contribution to good nutrition if it develops out of the processes of organized research.

What natural materials are available for conversion into this new product? Precisely what are their nutritional contributions? How do they vary nutritionally, chemically, physically from crop to crop and from one region to another? These are merely a few of the questions for the chemical research division to answer.

Can this new product be manufactured economically with existing processing equipment or will new mechanical processes and new packaging methods have to be invented and developed? This is a sample of what the engineering research division must work out.

Will people like this new food product? (If they do not, it remains in spite of all its nutritive values, a laboratory curiosity.) This is one function of the market research division.

What about the present products of a company like General Mills, Inc.? Can they be further enhanced nutritionally? Can they be processed more economically? Can they be packaged more perfectly so as to reach the consumer's table in ideal condition? These, too, are the continuing obligations of organized research.

After many years of such activity, a considerable store of knowledge is accumulated about natural foods and how to process and package them—fruits of research which are doubly valuable to a nation at war. This information, as a matter of course, has been made available to the government, together with the services of the entire General Mills research organization. One result has been a considerable development of new food products and their use in Army rations. Another, entirely different, is mechanical development and production which is serving the Navy.

Out of this research tradition and the intensified activity of recent months comes the conviction that our company, General Mills, Inc., must accept its responsibility to render service in the difficult years which face the world. Both before and after the war is won, food and proper nutrition will be prime problems which must be solved and solved correctly. The answers lie not in wishful thinking or political maneuvers but in aggressive, organized, enlightened research. The future is hard, but it is bright with promise.

General Mills, Inc.
MINNEAPOLIS, MINNESOTA

These are some of the leading products of General Mills, Inc. Most of them were born in the General Mills Research Laboratories. All have been enriched or restored in accord with the recommendations of the Food and Nutrition Board of the National Research Council, using techniques of enrichment and restoration developed in the General Mills Research Laboratories. In these times of critical food shortages, enriched flour and restored cereals must play an important part in the national dietary.

on nutrition in industry by state and local nutrition committees, the membership of which will include representatives from the following groups: health departments and their industrial hygiene division, industrial organizations, labor, labor departments, food producers, caterers, service clubs, etc., as well as nutritionists *ex officio*, and nutrition representatives. The assistant regional representatives will act in an advisory capacity to state and local committees; will make such direct plant contacts as may seem desirable; will survey these plants if they so desire; and will make recommendations. In-plant advisory services are also provided by the Technical Advisory Staff in Washington.

A National Advisory Committee, including representatives of the CIO, AFL, their respective auxiliaries, and the Railroad Brotherhood, has been set up and all of the unions concerned have urged their local groups to form local labor nutrition committees, according to information received from ODHWS. The tasks of these committees will be: (1) to set up small nutrition committees in each plant to cooperate with the plant cafeteria management, (2) to consider the feeding problems in the absence of cafeterias, (3) to exert an influence on the proprietors of nearby lunch places and stands.

A new pamphlet outlining the wartime nutrition in industry phase of the National Nutrition Program will be distributed to regional nutrition representatives, nutrition committees, plant executives, cafeteria directors and dietitians, public health and industrial hygiene officers, industrial physicians and other interested persons or groups, upon request.

National Food Situation. Following are summaries of important government releases affecting the food situation, for the period March 5–April 1.

Under date of March 5: USDA outlined procedure to be followed by city or village families in preparing to start a small backyard poultry flock for emergency food production.

March 6: Movement of peanut, soybean, cottonseed and corn oils into commercial channels was ordered to be controlled on a monthly allocation basis, effective April 16, allocations to be made according to civilian and war agency requirements, including Lend-Lease. Secretary Wickard in issuing the order stated that supplies are considered adequate to meet immediate military and civilian requirements but only the most urgent requirements of the United Nations.

Food Distribution Regulation 1, to be administered by FDA, transfers to USDA from WPB authority to issue priorities on foods. Purposes of the regulation are to enable government agencies such as the armed forces and Lend-Lease to obtain food supplies promptly when needed and to place USDA in a position to order delivery of food to be made to meet emergency situations for certain essential civilian users, such as crews on ships not under Maritime Commission control and other categories, where the time element in procuring food is of utmost importance. The regulation sets up priority ratings ranging from FR 1, the highest, to FR 10. Food orders issued by any government agency, except orders for rationed or "set-aside" foods, get automatic FR 10 ratings. All other ratings must be approved by FDA Director Hendrickson, including those of government agencies for rationed and "set-aside" foods and all requests of essential civilian agencies for priorities. Priorities will not be issued to essential civilian users on rationed foods without concurrence of OPA.

Dr. Russell M. Wilder, chief of the Civilian Food Requirements Branch of FDA and formerly chairman of the Food and Nutrition Board of the National Research Council, as a member of the Food Advisory Committee, will present and support the claims of civilians immediately before action is taken in allocating foods among the several claimants. In developing and presenting the food requirements of the civilian population, the Civilian Food Requirements Branch is receiving assistance from the Food and Nutrition Board of the National Research Council, the Agricultural Research Administration and other agencies of the government.

OPA established fixed mark-ups which retailers will use to compute maximum prices of eggs. Specific dollars-and-cents maximum prices of Georgia cane syrup and blends including this syrup were also established.

March 13: Support prices granted by USDA and OPA to farmers for vegetables for canning are 20 to 50 per cent higher than prices paid last year. Crops for which support prices are established include tomatoes, sweet corn, snap beans, green peas, Lima beans, beets, carrots, and cabbage for kraut.

OPA will set flat dollars-and-cents prices for the canned vegetables, by regions and grades, can sizes, types, and styles. On these products, amounting to over 90 per cent of the canned vegetable pack, civilian consumers will pay on the average about the same prices paid in 1942. OPA also outlined the general price program for asparagus and the remaining "minor" vegetables for 1943.

March 15: FDA Order 18, controlling distribution of tea, was amended with respect to the number of sizes of packaged tea, tea bags or tea balls, and containers allowed, effective March 31. Packages of loose tea for sale at retail are: 4 oz. and $1\frac{3}{4}$ oz. net weight, and tea bags or balls at the rate of 200 to a pound in three container sizes: 48, 16, or 8 bags. Packages for hotels, restaurants and institutional trade are: containers of 100 bags or balls, at rate of 200 per pound; and containers which hold multiples of 16 one-ounce tea bags for iced tea service only.

March 20: First trainload of 600 Mexican agricultural workers signed up for employment in this country left Mexico City for southern California to relieve a labor shortage in citrus crops. Other trains are expected to start soon. The selecting and contracting of Mexican farm workers and arrangements for their transportation are being expedited to fill orders placed with the U. S. Employment Service.

Under FDA Order 30, all stocks and future production of dehydrated Irish potatoes, sweet potatoes, cabbage, carrots, beets, onions and rutabagas are reserved for purchase by FDA or the Army to meet war needs. While military needs will have priority on the supplies of these products, the order provides for the release of such quantities as may be found necessary for civilian consumption. Dehydrated soups are not included.

Reports of the Bureau of Agricultural Economics, USDA, reveal the following facts and forecasts regarding the situation in the production of various foods: The estimated 1942 potato crop of 371 million bushels is only 4 per cent larger than the 1941 crop, and is small in view of greatly expanded government and civilian demands. The dry bean crop was estimated in December at 19.6 million bags, only a million larger than in 1941. Lend-Lease, military, and other government requirements for beans have expanded to such an extent that the Department is extremely anxious for farmers to achieve the 1943 dry bean production goal. The 1942 truck crop season was very successful. Tonnage of vegetables produced was about 10 per cent greater than in 1941. An increased demand, however, more than offset the influence of the larger crop. Record packs of most major canning vegetables were produced in 1942. Production of vegetables for processing exceeded that of 1941 by 13 per cent. The present outlook is for relatively small civilian supplies of canned vegetables from the 1943 pack, even if the pack should be as large as in 1942. Farmers are likely to raise from 10 to 15 per cent more chickens this year than in 1942. Materially larger supplies of chicken will be available

During Food Shortages...

It is well to bear in mind that dried brewers yeast, weight for weight, is the richest food source of the Vitamin B Complex. For example, as little as 1 level teaspoonful (2.5 Gm.) Mead's Brewers Yeast Powder supplies:

45% of the average adult daily thiamine allowance
8% " " " " " riboflavin allowance
10% " " " " " niacin allowance

— in addition to the other factors that occur naturally in yeast such as pyridoxine, pantothenic acid, etc. Following are suggestions for palatably mixing 1 level teaspoonful Mead's Brewers Yeast Powder:

(1) Shake in cocktail shaker with 4 ounces of milk (with or without 1 level teaspoonful sugar and cocoa).

(2) Stir with fork into ¾ ounce of ketchup or chili sauce. Optional, add a few drops of lemon juice.

(3) Stir with fork into 3 ounces of soup (preferably thick soups such as bean, pea, oxtail, beef, etc.).

(4) Spread on bread with 2 to 3 times the amount of peanut butter.

(5) Add 1 level tablespoonful (and a little extra salt) to 2 cups of meat stock gravy.

Mead's Brewers Yeast is supplied in 6-oz. bottles, economically. At the rate of even 2 level teaspoonfuls per day, per adult, a bottle should last over a month. Also supplied in 6-grain tablets. 250 and 1000 tablets per bottle.

Why not try this recipe at home? It makes good gravy taste meatier. Send for tested wartime recipes containing yeast.

MEAD JOHNSON & COMPANY, Evansville, Ind., U.S.A.

for consumption in 1943 than the record quantity consumed last year. It is likely that egg production in the United States in 1943 will be at least 12 to 14 per cent larger than in 1942. The goal for egg production in 1943 is 8 per cent larger than the output last year. Present indications are that the 1942 world crop of wheat, exclusive of the U.S.S.R. and China, was about 4225 million bushels, or about 250 million bushels above 1941. A crop of the size indicated is in excess of the annual consumption and increases the already very large world stocks of wheat to a new high. Large requirements for direct war purposes will restrict the supply of manufactured dairy products available for civilian consumption. Fluid milk consumption is expected to continue relatively large, at least until the short supply season next fall, but supplies probably will be smaller than demand at ceiling prices in some areas which have had substantial increases in population. Since a major part of the reduction in total milk consumption will be in terms of butter, and some increase in the consumption of fluid milk is expected in 1943 over that of 1942 or earlier years, the total nutrients other than butterfat and vitamin A obtained by civilians from dairy products in 1943 are expected to be at least as large as in any other year on record.

March 23: Expansion program to increase the production of quick-frozen vegetables by nearly 100 million pounds over 1942 was announced by USDA, bringing the total to over 200 million pounds. About 30 per cent of the production increase will be available to civilian consumers, giving them about 20 per cent more than in 1942. Expansion of 27 quick-freeze plants has been approved, most of which are scheduled for completion by June 1.

FDA Order 40 was issued providing that all shell eggs in cold storage May 31 should be set aside for governmental agencies. FDA Order 41 reserved the entire 1943 production of spray-dried whole eggs for delivery to governmental agencies.

March 24: USDA reported that 447 million pounds of foodstuffs and other agricultural commodities were delivered by FDA during January for shipment to the allied nations, about 26 million pounds of which were for North Africa, including wheat, sugar, flour, evaporated milk and soap. Larger deliveries of "energy-giving and heat-producing meats and other protein foods" needed by the Russians for winter fighting were made possible by a shift in shipping space requirements. Purchases of agricultural commodities by FDA for Lend-Lease, Territorial Emergency Programs, Red Cross and other purposes during February declined approximately 30 per cent compared with January, according to a Department of Agriculture report. While purchases reflect smaller acquirements of meats, grain products, and most other commodity groups, there were increases in purchases of soluble coffee, American cheese, dry whole milk, smoked pork, dried sausage, dry salt fish, oleo oil, rendered pork fat, granulated sugar, rice, and concentrated orange juice. Purchases of soluble coffee are being made for direct distribution by the Red Cross. While it has been among the items included in the Red Cross kit for prisoners of war since early 1942, purchases have jumped from an average 20,000 lb. per month in 1942 to more than 500,000 lb. in February of this year. It is packed with other edibles, such as dried whole milk, salmon, pork luncheon meat, corned beef, cheese, prunes or raisins, orange concentrate, and other items. Three packing centers, already in operation, have a total capacity of 24,000 packages daily for shipment to Geneva, Switzerland, and distribution from that point to all allied prisoners of war.

March 26: Secretary Wickard announced the appointment of Chester Davis as Food Administrator, effective March 29. He is to have charge of food production and distribution, working within the framework of the Department of Agriculture.

OPA Administrator Prentiss M. Brown announced that "satisfactory administration of price control can only be secured through the development of a staff of uncompensated personnel functioning through the machinery of the War Price and Rationing Boards." Price "panels" of 10 to 12 members will assist in the work of each local board, after having been given an intensive course of training and having taken an oath of office as OPA employees, each panel to have a price clerk to handle clerical operations.

March 30: More than 2 million cases of canned fruits and vegetables will be released soon by FDA to augment civilian supplies, as announced by USDA. Principal items in the group to be released are canned tomatoes, pears, plums, apples, and peaches with smaller quantities of other foods. The department also announced the transfer of about 12 million cases of canned fruits, vegetables, and juices—principally canned corn and peas—by the Army to FDA. These supplies will be released later by FDA in meeting emergency food situations. Plans are being completed to remove these transferred foods from canners' warehouses to provide the canners with more space before the 1943 packing operations begin. The Army has held these supplies until the present time to meet possible exigencies.

Specific dollars-and-cents ceiling prices by zones for all cuts of pork, beef, veal, lamb and mutton sold at retail, as provided in Regulation 336, OPA, issued March 5, were to be established for pork effective April 1, and for other meats shortly thereafter. An official OPA price list which the retailer is required to post prominently, sets forth the exact selling price per pound for all cuts and the kinds of cuts to be sold at retail. In addition, the selling price per pound or a lower price must be posted on any cuts of meat in the show case. The country is divided into 11 retail zones, the difference in zones being primarily the cost differences created by distance from the producing zone. Each zone has 2 sets of prices for all cuts, one applying to independent retailers with 1942 annual total sales volume under $250,000 (Classes 1 and 2), the other to independent retailers with 1942 gross sales of over $250,000 and all chain stores regardless of gross sales (Classes 3 and 4). Prices vary from 1 to 3 cents a pound between the two groups. Ceiling prices for other rationed foods for which red stamps of War Ration Book 2 are used are regulated by specific percentage mark-ups to the retailers' net cost for each item. OPA plans to establish and publish official flat dollars-and-cents ceiling prices, community by community, in the principal population centers throughout the country, for foods priced on a fixed mark-up.

A bulletin, "Civilian Spending and Saving, 1941 and 1942," received on April 1 from Calla Van Syckle, Department of Information, OPA, gives statistical information "on the use of income by sufficient income groups," and will be followed by another entitled "Distribution of Civilian Income, 1942 and 1943," both bulletins having been prepared by the Division of Research, Consumer Income and Demand Branch, OPA.

News From the Food Field. In the words of the *Food Field Reporter* for March 29, President Roosevelt "without warning even from the rumor boys," named Chester Davis, former AAA head, Food Administrator.

Editorial comment in the same issue concerns the plan of the Great Atlantic and Pacific Tea Company through its subsidiary, the Atlantic Commission Company, to ensure the growing of many thousands of carloads of additional farm vegetables. Also, it was reported that the government has ordered manufacturers to discontinue the manufacture of Rations K and C for the War Department after March 31. Overproduction was the reason given. A research kitchen, it is reported, has been established by the Soy Flour Association with headquarters in the Board of

The Newer Concepts of Meat in Nutrition

Meat . . .

and the Patient's Speedier Return to Productivity

THE need for man power in all types of industry makes it imperative that the incidence of illness be held to a minimum, and that convalescence be shortened as much as possible. Both these objectives can be more readily achieved by maintaining a state of adequate nutrition.

During the period of recovery from surgery or infectious disease, the return of strength and stamina is closely paralleled by metabolic readjustment of the organism. The increased protein requirement during this period is the reflection of a rebuilding and rehabilitation process, necessitated by the increased metabolic demands of temperature elevation and by restriction of food intake during the phase of acute illness.

The early inclusion of meat in the diet of the convalescent is an effective means of re-establishing nitrogen equilibrium. In addition to its biologically adequate protein, meat also provides significant amounts of the B vitamins and the minerals iron, copper, and phosphorus, all of which are needed in greater amounts during the period of convalescence.

The aroma of properly prepared meat arouses the appetite, and its extractives stimulate the flow of gastric juices, thereby increasing the desire for food and adding to the relish with which the meal is eaten.

The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

ACCEPTED AMERICAL MEDICAL ASSN

American Meat Institute

CHICAGO

Trade Building, Chicago. The kitchen is in charge of Irene Hume Taylor and Lucille Craven.

Another report of interest concerns a paper by Sylvia T. Durfee, School of Nutrition, Cornell University, which appeared in *The Brewer's Digest*. Miss Durfee points out that dried yeast can become a valuable addition to the average American diet which nowadays is apt to be lacking in good-quality protein and thiamin. Thirty-five recipes have been worked out, according to the report, for the use of yeast in combination with other foods. According to the story, the New York State War Council Office of War Nutrition Services has recently decided to supplement the diet of workers in New York State factories with a ration of dry brewers' yeast each day.

Adulteration of Foods. In view of the fact that new items are being added almost daily to the list of scarce commodities, a recitation of some of the ways in which such foods have been adulterated or contaminated through improper processing or handling in recent months is in order. For example, notices of judgment under the Federal Food, Drug, and Cosmetic Act in a release received March 9, include decrees against: chocolate-flavored syrup, consisting in whole or in part of a filthy substance; several consignments of butter, some manufactured by well-known concerns, containing less than 80 per cent by weight of milk fat, containing mold or filth, or weighing less than the amount marked on the package or roll; Cheddar cheese and other types of cheese, containing filth, maggots, and insect fragments; spray-dried egg yolk, in which soybean flour and carotin had been substituted in whole or in part for dried egg yolk; crab meat that had been prepared under insanitary conditions whereby it might have been contaminated with filth; oysters that were decomposed or contained added water; frozen fish, in whole or in part decomposed; also canned cherries, peaches, fruit cocktail, pears, and various canned vegetables, especially tomatoes, which were misbranded in that the labels were false and misleading and which failed to meet the definition and standards of identity prescribed by regulations of the Food, Drug, and Cosmetic Act, or which consisted in whole or in part of a decomposed substance. Several cases of adulteration of candy were recorded in which the products were condemned because they contained filth, one such being labeled in part "24 School Special Hi Bar," another, "Radcliffe's Soya Milk Candy Bar." Others were labeled "Nut Roll," "Coconut Roll," "Matzger's Big Marshmallow" (or "Yum Yum" or "Wham!"), "Madame Queen Fingers," etc. Several cacao products were seized as being heat-damaged, contaminated, or deficient in cocoa fat. A certain brand of wheat germ, mentioned in previous notices of judgment, was again condemned because the labeling bore false and misleading statements. Other "health foods" which were offered for sale as dietary supplements were a "vegetable compound tablet" which contained less than 1 grain of total mineral constituents, and a "vitamin capsule" which contained considerably smaller amounts of the vitamins than the amounts stated on the bottle label. Sweetened condensed milk which was contaminated with filth, and which was prepared for one of the largest milk distributors in the country, was condemned. Examination of a shipment of frozen eggs, also prepared for well-known distributors, showed the presence of decomposed eggs in portions and of excess whites in others.

Canned Foods Contents Table. Marjorie H. Black and Katherine R. Smith, Home Economics Division, National Canners Association, 1739 H Street, N. W., Washington, D. C., have prepared a table in which canned foods are grouped for the convenience of housewives in marketing under the rationing system. Weights of cans and approximate yields in cups of vegetables, fruits and juices are given for all canned foods in sizes used by the homemaker.

Meetings on Nutrition for Restaurant and Hotel Operators, Chefs, Stewards, and Their Assistants. The Nutrition Committee of Greater New York, in cooperation with hotel and restaurant organizations and members of the Home Economics Women in Business with restaurant experience, is planning a series of meetings to demonstrate the part that food establishments can play in the U. S. Government's Food Program. Subjects to be discussed will include: "The Restaurant Industry and the Nutrition Program"; "Raw Vegetables and Fruits Can Increase Sales and Profits"; "Plate Combinations with Popular Appeal"; and "Simplified Menu Planning."

"It's Up to You" is the title of a new play dramatizing the wartime food situation and how it affects every individual, presented by the Skouras Theaters, the American Theater Wing, and a group of food industry associations, with the cooperation of USDA, according to a release from OWI. It opened March 31 at the New York Academy of Music and was subsequently performed at seven theaters in New York City. No admission was charged. A simplified version is being presented by high schools, colleges, and community theater groups throughout the Skouras chain, which is donating theaters for the free shows as part of their war effort. The food industry associations, through the American Theater Wing, are financing the show. The script of the play is available to noncommercial groups throughout the nation for local presentation, including the National Theater Conference, American Educational Theater Association, American Communal Theater, National Thespian Dramatic Honor Society for High Schools, and others. These organizations have recently formed a Theater War Council to centralize and increase their contributions to the war. "It's Up to You," written by Arthur Arent, contains 27 scenes, showing the part of food in the war effort, how the consumer is affected, how he can make the best use of available foods from the standpoint of nutrition, and what he can do as an individual in the wartime food supply management job. Scenery for the play is supplied by slide projections.

Industry's War Production Problems. Among the resolutions adopted by the War Congress of American Industry, conducted by the National Association of Manufacturers, was one to the effect that the National Labor Relations Act should make it clear that supervisory personnel and other representatives of management shall, so far as the Act is concerned, be treated as within the definition of employers and not employees for the purposes of collective bargaining. The Congress also recommended the appointment of a single manpower administrator, independent of any other agency, to coordinate and balance manpower needs between the armed forces, agriculture, war production, and civilian activities.

Miscellaneous Nutrition Activities. According to the March *Nutrition News Letter*, ODHWS, several school systems are promoting the sale of fresh fruit and nuts instead of items such as candy and soft drinks. This step has been taken variously by a student committee, the P.T.A., a local nutrition committee, and a school board.

The training of volunteers for use in dietary departments of hospitals continues. In one Cleveland hospital 85 school teachers give one or more nights a week to help with the service of supper, having been recruited through the dietary department.

A list of references on the subject of food habits appears in the same issue.

Our Pledge to Users of V-C-B

TO YOU, THE DIETITIANS OF AMERICA, WE MAKE THIS PLEDGE . . . TO MAINTAIN THE QUALITY OF V-C-B AND ALL OTHER H.B.C. FOOD SPECIALTIES AND SUPPLIES FOR DIETETIC USE. WE PLEDGE OUR ALL-OUT EFFORT TO KEEP YOU SUPPLIED AND SERVE YOUR INCREASED WARTIME NEEDS. IN TURN, WE ASK YOUR COOPERATION. WE ARE FINDING IT NECESSARY TO CURTAIL AUTO TRAVEL AND REDUCE THE FREQUENCY OF OUR PERSONAL CALLS ON YOU. AND SO THAT WE MAY ALL CARRY ON, WE ASK YOU TO PLEDGE THE FOLLOWING:

★

WILL *You*

MAKE THIS PLEDGE?

In order to help save man-power, conserve tires, gas and other vital war materials, I will cooperate by making my orders LARGER and FEWER. By such cooperation, I serve my country and help shorten the road to Victory.

Hilker & Bletsch Company 614 W. Hubbard Street Chicago, Illinois

★ ★ ★ ★ ★ ★ ★

"LOGISTICS" *is the Word*

★ The job itself is almost super-human in global warfare: Supplying our armed forces *what* they need *where* it is needed *when* they need it.

Defatted milk solids has a vital role in this colossal task—concentrating the essential food constituents of milk in a minimum of shipping and storage space—the same vital nutrients which have such prominence in the National Nutrition Program.

While wartime requirements take a large part of current production, cooperation of government agencies with producers and processors can help to meet growing demands for the non-fat solids of milk in human nutrition—and so can you. Whenever conditions permit, you can improve institutional diets, conveniently and economically, with defatted milk solids.

AMERICAN DRY MILK INSTITUTE, Inc., 221 N. La Salle St., Chicago

Candy. As part of their elaborate campaign to "swing public opinion to the idea that candy has definite food value and that it is a dietary essential for persons in normal health," the National Confectioners' Association added three new pieces of literature which were to be widely circulated, according to the *Food Field Reporter*, March 1. The first, a 4-page folder, printed in patriotic colors, is called "Candy; Its Place in the Diet." The second is an 8-page folder, also in red, white and blue, titled "Fighting Foods" and giving the story of candy in its relation to our armed forces, and as part of the various Army rations. The third item is a 16-page booklet, "Candy, a Valuable Food," which "gives the place of candy in our dietary, agricultural and industrial life, and contains much information sustaining the contention that candy is a food, naming some of the kinds of candy and their contents, figures on nutritive values, and some data as to production and sales annually."

Iodized Salt. The Food and Nutrition Board, National Research Council, recommends that renewed emphasis be given the use of iodized salt, the demand for which has been decreasing.

Egg Grades. The Poultry and Egg National Board has published an interpretation of the newly established United States consumer grades on which wartime egg price ceilings are based. Four pages of questions and answers make up the release, which covers judging of eggs by candling, sizes and qualities available to consumers, and advantages of grading and corresponding fixed price ceilings. Copies will be sent to dietitians by Kathryn B. Niles, home economist, Poultry and Egg National Board, 308 W. Washington Street, Chicago. A later release offers a comparison between the consumption of poultry in January 1942 and that of January 1943, indicating a tremendous increase during the latter period. A page of recipes for chicken soups and chowder is also available upon application.

Argentine Cheese Standards. In order to compete in United States markets, Argentine cheese producers have set up new standards of quality, age, shape, weight, color, packing, and storage for cheese shipped to this country, according to an article in *Business Week*. These new standards became effective February 24.

National Restaurant Association News. The Educational Department Bulletin of the March 4 *News Letter* of this association, edited by Alberta M. Macfarlane, contains, as usual, several valuable suggestions. Restaurant managers are urged, for example, to make adjustments in their food operation today, not tomorrow, if they are to stay in business. One of the first adjustments should be the simplification of the menu. Rationing of almost all food supplies will make this a necessity and the sooner menus are limited to fewer courses and fewer selections, according to Miss Macfarlane, the better will be the control of the food allotment. Also, with fewer and simpler menu items to prepare, more time will be available to concentrate on the ones featured, which should result in higher quality products and be the means of popularizing less familiar dishes; overproduction and waste, too, will be reduced. Eventually, of course, the menu may be restricted by the government as it is in England. Among the new foods which restaurants will be serving in the future as a result of food shortages are dehydrated foods, frozen cooked foods, and soybean products. It is expected that new foods will bring changes in the eating habits of the nation and that customers will therefore become more open-minded about trying hitherto unknown dishes. A dozen excellent suggestions for luncheon specials or combinations are included in the *News Letter*.

Individual wage increases may be granted to restaurant employees without application to the War Labor Board, provided that they are given for one of the following reasons: (1) advance in position to a classification that warrants a higher rate of pay, (2) additional responsibility, (3) length of service, as a person hired at a minimum rate who had been promised an increase after a certain length of time.

The editor of the *News Letter* suggests that in order to test the authenticity of directives and orders from Washington which appear in the newspapers, the following checks should be made: Does the article have a Washington dateline? If it is an official departmental release, reference will be made in the body of the release to the department—such as WPB, OPA, WMC, Department of Agriculture, etc.—giving out the statement. Most stories in the daily press relate to rationing to consumers; hence local restaurant associations or local rationing boards should be consulted to make certain the information is authentic, complete and applies to restaurants.

Weekly Index of Periodical Literature in the Field of Public Health. In view of the increasing interest of the readers of this JOURNAL in the field of public health nutrition, attention is called to the *Library Index* of the National Health Library, 1790 Broadway, New York City, which for many years has presented current material in concise form to save the time of the busy public health worker in hunting through magazines for material. The *Library Index* is composed of references to articles on public health and allied subjects in about 500 publications, including health journals, medical literature, and state and city health department periodicals, the last class not being indexed elsewhere. The entries are selected for their timeliness and authoritativeness and items are classed under general headings to assist in finding articles on subjects of special interest. Although the National Health Library does not supply reprints, in some cases these may be obtained from the author or publisher. Subscription to the *Library Index* is $2.50 per year, applications to be sent to the above address.

Waacs and Military Status. According to the New York *Herald Tribune*, March 10, the War Department has approved proposed legislation designed to elevate the WAAC from its semi-military status by placing it in the Army of the United States. An amendment to the Senate bill which would give military status to the Waacs prevents members from obtaining allowances for dependents, however. Another provision which would automatically follow, according to this account, would be the commissioning of women physicians in the Medical Corps. Unless the regulations should specify otherwise, passage of the measure to include the WAAC in the Army would also give the group the same rank designation and would allow Mrs. Hobby, whose rank is now equivalent to that of colonel, to be elevated to any rank up to that of a general. As of March 9, there were 43,682 Waacs enrolled, 14,000 of whom were already in the field, and 202 overseas.

A later news item March 16 reported that the bill as finally approved by the House Military Affairs Committee limits the top rank to that of colonel. Also the size of the corps is limited to 150,000 and physicians and nurses are excluded. The word "auxiliary" will be stricken from the corps name, making the initials WAC, while the pronunciation will remain the same.

Agricultural Marketing Specialists Needed. The United States Civil Service Commission announced February 23 that agricultural marketing specialists are needed to work with marketing problems as affected by Lend-Lease, food distribution, and other war activities in such fields as:

How the "Glamour Girl" became a war worker

Always the life of the party, Ice Cream, the "Glamour Girl" of food, now shows her substantial character!

A popular food . . . A nutritious food

As a War Worker extraordinary — in war production, in the armed services, in civilian life — Ice Cream is today an important part of the nutrition program.

ICE CREAM

contributes bone-building, tooth-protecting calcium, as well as strength-building proteins and essential vitamins. Ice Cream provides the same essential nutrients as milk, our No. 1 protective food, although in different proportions, and makes better-balanced meals pleasant and practical. War is bringing widespread recognition of the real food value of Ice Cream.

NATIONAL DAIRY COUNCIL
111 N. Canal St., Chicago, Dept. J
Please send me attractive free booklet "Ice Cream for Everyday Use," which gives suggestions on meal planning, food values, and recipes.

Name_____

Address_____

City_____ State_____

ICE CREAM

. . . CONTRIBUTES TO GOOD NUTRITION

cotton, dairy products, fats and oils, feeds, fruits and vegetables, grains, live stock, meats, poultry and eggs, tobacco, and wool. Persons with education and experience in other fields may also be used. Salaries range from $2,000 to $6,500 a year, not including payment for overtime. There are no age limits and no written examination will be given. Complete information and applications may be obtained at first and second-class post offices, from Civil Service regional offices, and from the United States Civil Service Commission, Washington. Applications will be accepted until further notice.

Sanitation in the School Lunchroom. In the December issue of *College Health Review*, published by the Division of Hygiene and Public Health, School of Medicine, Howard University, Washington, D. C., under a joint grant from the National Tuberculosis and American Social Hygiene Associations, Mrs. E. Lucille Segre, instructor in homemaking, Dillard University, writes on "What the Teacher Should Know About the Sanitation of Food and Eating Facilities in the School." The main points of the paper, all of which are carefully expounded, are as follows: (1) the importance of the teacher's knowledge of the requirements for sanitation; (2) the advisability of selecting sanitary markets for the purchase of foods; (3) the necessity for a knowledge of the Federal Food and Drugs Act; (4) the necessity for thorough cooking of foods, particularly meat, and careful cleansing of foods that are to be eaten raw; (5) insistence upon serving only pasteurized bottled milk, including chocolate milk; (6) proper storage and adequate refrigeration of all foods; (7) cleanliness of the environment with special attention to dishwashing and the prevention of flies and rodents; (8) a thorough health examination of all employees and proper facilities for assuring their cleanliness of person, and proper supervision for assuring good health habits. In regard to the last-mentioned point, Mrs. Segre remarks: "The personnel of the cafeteria may be a means of carrying disease. The cashier, the manager, and all the employees should have a health examination before employment. It guards other employees as well as children and teachers from infection. The physical examination also serves the purpose of showing the physical reserve of the employees, thus indicating fitness or unfitness for the type of labor that many lunchrooms require. The working conditions for the employees should be sanitary, including clean rooms, proper lighting, adequate ventilation and heat. Inadequate light creates the necessity for close attention to the details of work and induces premature muscular and nervous fatigue. Because of this, the working capacity of the individual is reduced and the number of mistakes increased, along with a heightened probability of accidents.

"Adequate provision should be made for the needs of the employees as persons. There should be adequate dressing facilities where a change of uniform may be made. There should be decent toilet provision and washing facilities which should include clean bowls with hot and cold running water, soap, and towels. The toilet and dressing rooms should be well ventilated and screened. The toilet should not open into the kitchen unless there are two doors with an entry between. All persons coming in contact with food must wear clean outer garments and must be required to keep their hands clean at all times when handling food. They should be required to wear caps or hair nets throughout the working hours."

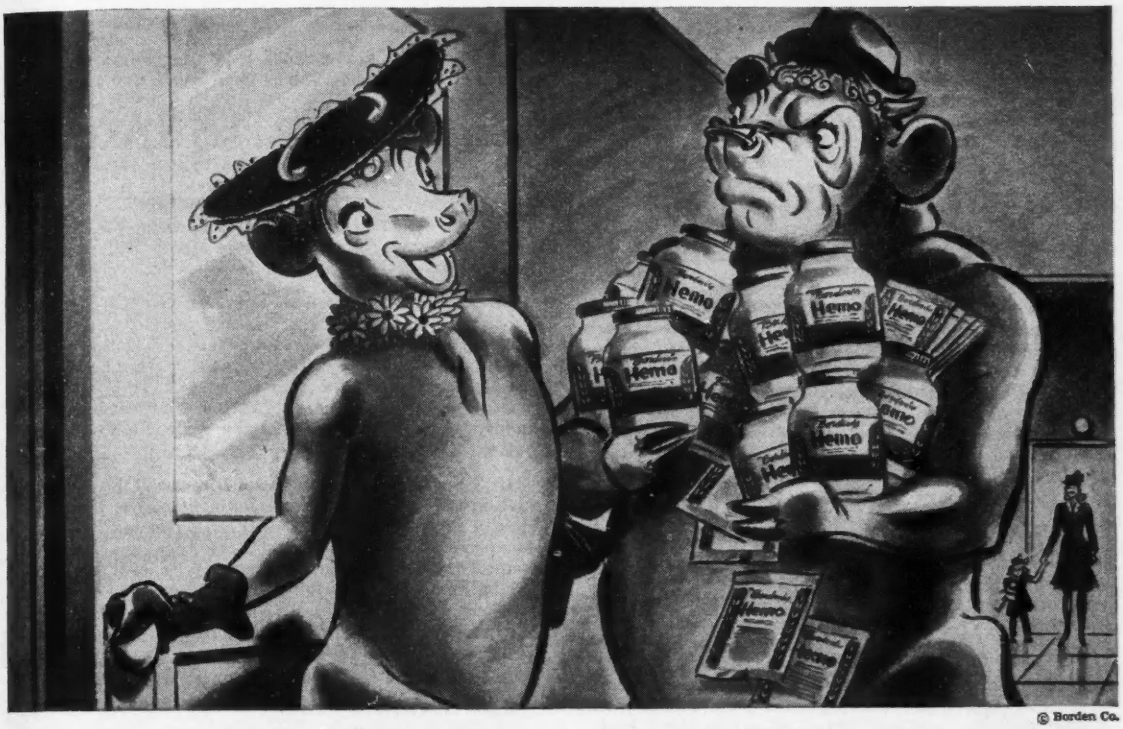
Wartime Nutrition and Homemaking Course. This is the title of a course prepared by the Home Service Section, Appliance and Merchandise Department, General Electric Consumers Institute, Bridgeport, Connecticut. An *Instructor's Manual and Master Guide* for use in teaching the course outlines the information to be presented, describes the properties needed, and gives a complete set of instructions and illustrations of material for use in promoting the nutrition classes to industrial employees. The course can be given in three or four lessons, and the estimated cost per person per course, including equipment, personnel, literature, food, and promotion, is 54 cents for a class of 1000 students. The material for the course was reviewed by the Nutrition Division, ODHWS, and was prepared in cooperation with the American Meat Institute, Wheat Flour Institute, National Live Stock and Meat Board, Poultry & Egg National Board, Connecticut Dairy Council, and other organizations. It has been used in teaching hundreds of General Electric employees, according to Edwina Nolan, manager, Home Service Section. Those interested in giving the course to groups are asked to write to Miss Nolan. It is understood that one copy of the Master Nutrition Guide will be furnished free to home economists and teachers. Among the materials used in connection with the course is a booklet entitled "How to Get the Most Out of the Food You Buy," prepared by the General Electric Company, and available at a cost of one cent each, and a condensed version of the course at 5 cents a copy.

Nutrition Planning, New York State. In the March 3 issue of the *Food Field Reporter* there is an announcement of a probable sweeping reorganization of New York State's nutrition services to stimulate war production, recommended in a report made to the Governor and state legislature by the State Joint Legislative Committee on Nutrition, of which Senator Thomas C. Desmond is chairman. Principal recommendations of the Nutrition Committee were as follows: (1) the temporary War Nutrition Service, now in the State War Council, to be replaced by a permanent Nutrition Council in the State Health Department; (2) the state's nutrition policy to be directed chiefly toward improving the diet of war workers; (3) the Industrial Code to be amended to require factory canteens in war plants, and such food not to be included under rationing; (4) war plants to be encouraged to serve between-meal snacks of nutritious foods, and to cooperate with the state by adding brewers' yeast to the on-the-job diet of workers; (5) responsibility for the nutrition program in industry to be vested in the Division of Industrial Hygiene of the State Labor Department, under the direction of the proposed Nutrition Council. It was also urged that milk deliveries to schools be given priority in the event of milk rationing, that financial assistance by the state be given wherever necessary to enforce the penny milk program, and that a full day's requirement of vitamin D, as soon as practicable, be added to school milk. It was suggested that the State Board of Pharmacy be authorized to inspect production and sale of vitamin pills, and that the Bureau of Food Control be given jurisdiction over vitamin-enriched foods.

American Red Cross. The organization's annual report for the year ending June 30, 1942, states that 1731 chapters, with a staff of 16,093 nutritionists and instructors, offered the standard nutrition and canteen courses during the year. The organization has also cooperated with state nutrition committees in providing refresher courses, the activities of the Red Cross in this field being primarily educational.

Nutrition Foundation, Inc. A list of fifteen Research Grants-In-Aid supported by the Nutrition Foundation, Inc., was approved by the Board of Trustees March 12. These grants are fairly well distributed over this country and Canada and will support studies on amino and acetic acids, metabolism, vitamin and nutritional studies, and problems relating to the dehydration of foods.

Successful Women. *Successful Women and How They Attained Success* by Isabella Taves, published by E. P.



© Borden Co.

"Today," laughed Elsie, "we're detail men with horns!"

"VERY FUNNY—I don't think!" mumbled Elmer. "Now, what I want to know is what *you* have to say that could interest a dietitian!"

"I'm going to talk to her about *special-purpose foods*," answered Elsie impressively.

"Well, I'll be a monkey's uncle!" bellowed Elmer. "Here I break my back trucking this load for you—AND NOW YOU TELL ME you're not going to talk about HEMO!"

"Oh, but I am, dear," soothed Elsie. "HEMO *is* a special-purpose food! It's a vitamin-fortified food to supplement the regular diet when indicated and it tastes *better* than the grandest-tasting chocolate malted—"

"Save it for the dietitian!" interrupted Elmer. "You'll run out of words before she even opens the door."

"I never run out of words when I'm talking about HEMO," smiled Elsie. "You see, just one glass of HEMO (mixed in milk) gives a normal person half his daily requirements of Vitamins A, B_1, B_2, Niacin, Vitamin D —*and* Iron, Calcium, and Phosphorus."

"Pardon *me* for horning in!" sneered Elmer. "But as long as *you're* telling the story—where's the chapter on Vitamin C?"

"You don't have to tell a dietitian that we purposely omit Vitamin C from HEMO," explained Elsie. "She knows folks get it easily if they drink fruit and tomato juices . . . Now *do* be quiet, dear! Here she comes."

Hemo compared with minimum daily adult requirements*

	Adult Minimum Daily Requirements*	1⅓ ounces of Hemo and 16 fluid ounces of milk (2 glasses)	1⅓ ounces (2 servings) of Hemo Powder
Vitamin A	4000 U.S.P. Units	4900	4000
Vitamin B_1	333 U.S.P. Units	400	333
Vitamin B_2	2 Milligrams	3	2
Vitamin C**	30 Milligrams**	Negligible**	None**
Vitamin D	400 U.S.P. Units	410	400
Niacin amide	***	10.3	10
Iron	10 Milligrams	15.7	14.7
Calcium	750 Milligrams	950	376
Phosphorus	750 Milligrams	750	288

*As set by Federal Security Administrator under authority of the Federal Food, Drug and Cosmetic Act.

**This product does not contain Vitamin C, an essential in food nutrition.

***Minimum adult daily requirements not yet fully established.

Borden's **Hemo**

IF IT'S BORDEN'S, IT'S GOT TO BE GOOD!

Dutton & Company, New York, contains, according to one reviewer, "two of the most entertaining stories concerning the Barber sisters, Edith and Mary, home economists of note, the latter now in charge of the stupendous task of planning meals for Uncle Sam's Army." Among the thirty "successful women" are famous actresses, editors, nurses, and so on. The only sour note, sounded by a reviewer in the Sunday *Times-Union*, Jacksonville, Florida, is this: "One would think that practically all the smartest women of the country lived in New York, to judge by the ones Miss Taves chose to honor."

Forsyth Dental Infirmary for Children, Boston. The twenty-eighth annual report, issued this year in curtailed form in keeping with the times, states: "Increased appreciation of the effectiveness of recommendations from the Nutrition Department [of which Ruth L. White, member of the American Dietetic Association, is Chief] has been notable. This is not wholly ascribed to the fact that we are on a war basis when scientific investigation of food values occupies a commanding position in health measures. We have repeatedly found both in laboratory and clinic that the state of the teeth is very largely correlated with general bodily condition. Clear methods of record and tabulation have afforded much indisputable evidence of this relationship. Physicians, patients, and institutions have put into practice the precepts taught here and we are witnesses of the fact that they constitute steps in fundamental prevention of dental difficulties."

New York Diabetes Association, Inc. An open meeting of this association under the auspices of the Committee on Internal Medicine was held March 16 at the New York Academy of Medicine. The program consisted of a symposium on "Diabetic Retinitis" at which the problem of treatment from the ophthalmologist's viewpoint was presented by Dr. Sanford R. Gifford, professor of Ophthalmology, Northwestern University Medical School, Chicago, with discussion by Dr. Conrad Berens; and from the internist's viewpoint by Drs. Louis Bauman, Presbyterian Hospital, and Harry G. Jacobi, Lenox Hill Hospital, with discussion by Drs. Herman O. Mosenthal and Frederick W. Williams.

Meeting the Problem of Food Rationing. In a circular letter to managing officers of Illinois State Institutions, March 4, for the attention of dietitians, Mrs. Christine Ryman Pensinger, supervisor, Bureau of Institutional Housekeeping, Springfield, Illinois, includes recipes for use during food rationing. She writes: "During the last few years we have been working on recipes which would stretch the meat allowance and thus help to reduce the meal cost. Today, we have an entirely new reason for developing recipes, namely, for the purpose of extending rationed foods so that we can still have sufficient food and live within the points allocated to us." Mrs. Pensinger is not waiting until the food situation grows more serious. She requests that: "In the future, please do not peel any potatoes before cooking for patients and employees except the small amount which would be served to employees and staff in the form of mashed potatoes and these should not be served more than once a week. By taking these precautions now we are of the opinion that you will be able to stretch your potato allotment to meet your needs. By eliminating the peeling of potatoes from 15 to 35 per cent of the potatoes will be saved as well as valuable minerals and vitamins."

The meat extender recipes which are included have been prepared in step form and contain on the reverse side an analysis of the ingredients and the number of servings. Among the suggestions are liver loaf, potato and liver salad, "tomalie" pie, soybean and cereal meat cakes, vegetable chowder, vegetable meat loaf, meat and potato casserole, cabbage casserole, hot kidney bean salad, and homemade hominy.

A recipe has been devised for extending peanut butter and since this product in all likelihood will be scarce from now on, according to Mrs. Pensinger, it is suggested that this procedure be followed routinely.

It is stated that all recipes were first worked out in the Bureau of Home Economics test kitchen and adapted to larger quantities for the serving of 100 to 1000 employees and patients at the Elgin State Hospital.

Mrs. Dodge Appointed to Subcommittee on Industrial Nutrition. Mr. Curtis M. Hillard, director of the Subdivision on Health, Massachusetts Committee on Public Safety, has appointed Mrs. Quindara Oliver Dodge chairman of the Massachusetts Subcommittee on Industrial Nutrition. This is to be a subcommittee of the State Committee on Industrial Health and also of the State Nutrition Committee.

Dr. Franklin C. Bing Appointed Director of the American Institute of Baking. The appointment of Dr. Bing, previously secretary of the Council on Foods and Nutrition, American Medical Association, has been announced by Ralph D. Ward, president of the Institute, as a part of the baking industry's contribution toward meeting America's nutritional problem. Dr. Bing is a member of the Food and Nutrition Board of the National Research Council, and is assistant professor of physiology at Northwestern University Medical School, Chicago.

Connecticut Dietetic Association. The spring meeting, April 14, Y.W.C.A., New Haven, included the following program: "The Importance of Nutrition During Pregnancy," Mrs. Bertha S. Burke, School of Public Health, Harvard University; "The Use of Nutrition Aides in the Dietary Department," Mrs. Leah Kane O'Neill, New Britain General Hospital, Mrs. Alice Manek Stewart, Norwalk General Hospital, and Mrs. Josephine Hoffman D'Andrea, Bridgeport Hospital; "The Use of Surplus Foods and the Penny Milk Program," Mrs. Edith Cushman, FDA.

The professional Education Section with Helen J. Hubbell as chairman, has endeavored to assist the campaign for an increase in the number of training courses and student dietitians. An effort was made to reach high school students in the state through the Coordinator of Wartime Guidance in each school. Letters outlining briefly the educational requirements for a dietitian and the many professional opportunities available were sent to each coordinator, and the booklet "Dietetics as a Profession" published by the American Dietetic Association was suggested as a source of further information. A speaker on this subject was offered in each case.

According to *News Notes*, bulletin of the association, Dr. Martha Potgeiter, School of Home Economics, University of Connecticut, is conducting experiments to determine the loss and retention of growth-promoting properties of home dehydrated vegetables. Lura Mae Odlund is graduate research assistant in nutrition at the University.

Mrs. Leah O'Neill, chief dietitian, New Britain General Hospital, reports that the canteen workers have made more than adequate returns for the time spent on their instruction. In January, 19 volunteers worked a total of 88 hours; in February, 32 graduates volunteered 205 hours service. Two or more workers are assigned daily for food preparation and serving.

Edith Reffke, chief dietitian, Greenwich Hospital, uses nutrition aides to check menus, and to check waste of butter, milk, bread, tea, and coffee on wards. Two canteen aides and one nutrition aide also assist in the kitchen, daily except Sunday.

FOR THE
DIABETIC

ACCEPTED
AMERICAN MEDICAL ASSN.

ACCEPTED
For use in carbohydrate restricted diets.

A Salad Dressing of Known Food Value

For summer greens and hot vegetables—Cellu Soyamaise adds fat, but is relatively low in carbohydrate. Made with soy bean oil and seasoned to a deliciously flavorsome tang. Send for free sample and Cellu Catalog of Diet Foods.

Analysis

Fat	85.07%
Protein	1.63%
Carbohydrate	0.79%
Ash minerals	0.18%

CELLU LOW CARBOHYDRATE *Dietary Foods*

CHICAGO DIETETIC SUPPLY HOUSE Inc.
1750 W. Van Buren St. CHICAGO ... Illinois

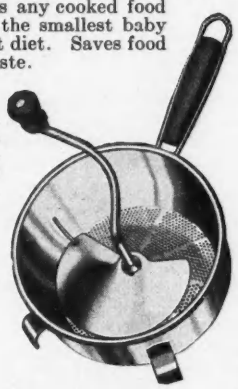
Foley **FOOD MILL**

Guaranteed by Good Housekeeping

Quickly Strains:
CARROTS
SPINACH
TOMATOES
APPLE SAUCE
APRICOTS
GREEN BEANS
SOUPS
PEAS
BEETS
PRUNES
BEEF
LIVER

You save time and energy in straining all fresh cooked vegetables and fruits with the Foley Food Mill. With just a few turns of the handle, it separates fibre and hulls and purees any cooked food fine enough for the smallest baby or for any adult diet. Saves food values. No waste.

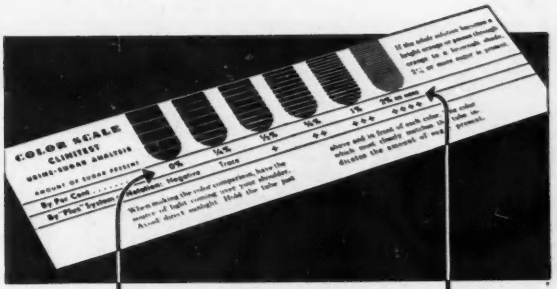
Made of steel. Rust and acid-resistant. Declared essential by War Production Board.



$1.25

Special Offer to Dietitians

Foley Mfg. Co., 113 Second St. N.E., Minneapolis, Minn.
☐ I enclose 65¢ for Foley Food Mill, postpaid.
☐ I enclose $4.95 for Master Size Foley Food Mill, postpaid (capacity 5 qts.).
☐ Send free booklet, Strained Foods.
Name _____
(write address plainly in margin)



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DEPENDABLE GLUCOSE DETERMINATIONS MADE IN LESS THAN 1 MINUTE

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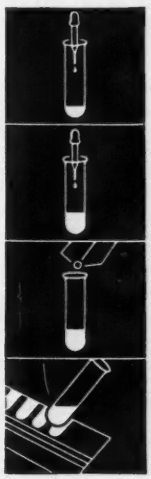
Simply do this:

(1) 5 drops urine in tube

(2) Add 10 drops water

(3) Drop in tablet

(4) Allow for reaction, then compare with color scale



The technic is so simple and so dependable, it is as convenient for home cases as those that are hospitalized.

Clinitest Sets are available through pharmacies and medical supply houses. Write for full descriptive literature.

EFFERVESCENT PRODUCTS, INC.
ELKHART, INDIANA

The Greenwich Tuberculosis Association has compiled a pictorial leaflet containing rules for good health, daily food requirements, and suggestions for the packing of a healthful lunch. Titled "Calling All Parents," this leaflet has been distributed throughout the public schools. Through the cooperation of a leading department store, the association arranged an exhibit on the importance of an adequate breakfast and a good packed lunch, and also sponsored a "Victory Food Demonstration."

The film, "Education of the Diabetic," by the Metropolitan Life Insurance Company and the Baker Clinic, has been shown to hospital dietitians, public health nurses and social workers of Greenwich.

Among recent appointments are the following: Mrs. Josephine Hoffman D'Andrea, to Bridgeport Hospital; Frieda L. Sherman, New Britain General Hospital, to Malden Hospital, Massachusetts; Ruth Stone, Samaritan Hospital, Troy, New York, to New Haven Hospital, replacing Esther Coker, recently married to Lieut. Norman Laffer; Mrs. J. L. Hopson, Children's Hospital, Boston, to New Haven Hospital, replacing June Collins; Elizabeth H. Dickinson, to New Britain General Hospital; Sarah Thames and Betty Jane Knox, to University of Connecticut; Marjorie Burr, to Manchester Hospital; June Bricker and Mary C. Shea to Connecticut Dairy & Food Council.

Pauline Emerson, former assistant dietitian at Bridgeport Hospital, is stationed at Fort Meade and expects to go overseas shortly.

Florida Dietetic Association. The January *News Letter* carries a statement of the "Principles of Professional Ethics" compiled by the House of Delegates, American Dietetic Association.

Edith Manford, assistant dietitian, Florida State College for Women, and president of the state association and member of the Executive Board of the State-Wide Public Health Committee, recently conducted a canteen course in Tallahassee under the auspices of the Red Cross.

Mrs. Vera Williams Walker has been appointed nutritionist, Bureau of Maternal and Child Health, State Board of Health, Jacksonville. During 1941–42 Mrs. Walker was state supervisor of the WPA School Lunch Program.

Mrs. Margaret Shatswell Price is senior translator at Wright Field, Dayton, Ohio. Proficient in five languages, Mrs. Price states that she has already used four. She is also on the directive board in charge of the cafeterias at the field.

As chairman of the Reorganization Committee and member of the War Activities Council, Anna M. Tracy attended the Executive Board meeting of the American Dietetic Association, Chicago, February 19–20.

Mary Lois Gill, formerly assistant dietitian, Florida State College for Women, has been accepted in the Army and is now stationed at Walter Reed General Hospital.

Recent appointments include the following: to Florida State College for Women—Helen Hannon, Teachers College, Columbia University; Mrs. Cynthia Davis, Georgia State Teachers College; Mrs. Norma Bauer White, replacing Helen Cate, now studying at the University of Chicago; and Elizabeth Burwell Harrison, replacing Mrs. Leia Venable Hager, resigned. Mrs. Dorothy Young Schmidt, whose husband is in foreign service, has been appointed assistant dietitian at Dade County Hospital.

Graduate dietitians of the 1941–42 training course, Florida State College for Women, have accepted the following appointments: Merle Seller, University of Alabama; Virginia Ames, University of West Virginia; Sara Moore, Alabama Polytechnic Institute; and Evelyn Kembel, Indiana University. Student dietitians now in training are: Janet Pittman Mastin, graduate of the college; Emily Lou Beeler, Florida Southern at Lakeland; Mildred Stevens, Wayne University; Alice Lutkis, College of St. Theresa, Winona, Minnesota; and Helen McVey, Kansas State College.

Margaret H. Dasher, assistant dietitian, Florida State College for Women, has announced her marriage to Mr. Joseph Crevasse, the college horticulturist.

Hawaii Dietetic Association. The following officers have been elected for 1943: president, Kathryn Shellhorn; vice-president, Martha Reilly, University of Hawaii; secretary, Lillian Elsholtz, Queen's Hospital; treasurer, Sarah Pettee, Y.W.C.A. Cafeteria. Section chairmen are as follows: Administration, Mary Murai, Kuukina Hospital; Professional Education, Marian Weaver, University of Hawaii; Community Education, Ruth Kueffer, McKinley High School; and Diet Therapy, Frances Janda, St. Francis Hospital.

The following subjects have been presented at monthly meetings: "Recent Findings on Vitamin A," Miss Kueffer; "Vitamin C," Frances Pringle; "Vitamin K," Kathleen Olding; "Therapeutic Diets," Miss Elsholtz; "Emergency Feeding Program of the OCD," Helen McGill; "The Part of Women in the OCD Program," Mrs. Paul Gantt; "New Nutrition Teaching Program at McKinley High School," Miss Kueffer; "Army Mess Management," Captain R. C. Gillingham, Mess Officer at Provisional Hospital No. 3; "Establishing Ceiling Prices," Dr. Norris, OPA; "Diet Therapy From the Medical Point of View," Dr. Beck; "Health for Victory Clubs," Mrs. M. Emery, Home Service Department, Hawaiian Electric Company; "Home Economics Extension During Wartime," Mrs. A. Trimble, University Extension Service.

Veda M. Tochterman, Queen's Hospital, who represents the dietetic association on the Territorial Nutrition Committee, reported a need for diet instruction for defense workers having gastric disturbances and the entire membership volunteered their services.

Illinois Dietetic Association. The program of the annual meeting, Peoria, February 26–27, included the following subjects and speakers: "The Dietitian in the War Effort," Frances MacKinnon, President, American Dietetic Association; "The Miracle Bean," Dr. J. E. Hunter, Allied Mills, Inc.; "Food Rationing," Mr. A. Johnson, OPA; and "National Nutrition Program for Industry," Helen E. Walsh, Regional Nutrition Representative, ODHWS.

The state association has purchased with surplus funds a $500 war bond.

Dorothy Tomarack, Cook County Hospital, has accepted an appointment to Wesley Memorial Hospital, and Jane Smith Pond has resigned her position at the Chicago Memorial Hospital.

Maryland Dietetic Association. At the March meeting Dr. R. H. Allen, USDA, discussed "Problems of Food Supply in Wartime."

Major Helen C. Burns, Office of the Surgeon General, recently addressed the staff and student dietitians of the Johns Hopkins Hospital at a dinner meeting at the Hopkins Faculty Club.

Student dietitians training for Army service at Johns Hopkins Hospital are: Ruth Sleeman, Jane Chapin and Charlotte Weikinger, University of Maryland; Mary Lou Eathorne, Texas State College for Women; Honore Mary John von Harz, Mundelein College; and Deborah Clifford, Simmons College. Ruth Hansen, University of Wisconsin, is taking the regular student training course.

Having completed their six months training for Army service, Ann Engebretsen and Adele Knerr have left to join their Army hospital units at Percy Jones Hospital, Battle Creek, Michigan, and Fort Lewis Hospital, Washing-

STRETCH HARD-TO-GET-FOODS

CREAMED HAM'N'EGGS
Cube or dice left-over ham; add, with sliced hard-cooked eggs, to your favorite white sauce. Pour piping hot over slice of Toastmaster Toast. Garnish and serve with extra toast points. Delicious, and makes a little ham go a long way!

...by adding TOASTMASTER TOAST to the recipe!

Never before has TOASTMASTER TOAST been *so important* to dietitians who WANT to conserve food to help win the war ... who MUST conserve it to keep costs in line! It's the magic touch that adds style to left-overs—makes war-stretched dishes tempting, satisfying, attractive. It's the familiar touch that adds the famous golden-crisp tender-center deliciousness that millions get from their TOASTMASTER TOASTERS at home. Best of all, it's the toast that's always perfect *without waste* ... so it costs just a trifle! Send for our FREE recipe booklet filled with food-saving suggestions.

DON'T NEGLECT YOUR TOASTMASTER TOASTER—If you clean it daily, don't let careless help abuse it, it will serve you well until we can again fill civilian needs. If it needs adjustment or repair see your dealer or write us. For new parts, be sure to return the old ones.

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THE NATIONAL HABIT AT HOME AND IN PUBLIC **TOAST**

Toastmaster Toaster makes Most of the World's Toast!

ton, respectively. Edith Jones, formerly on the Johns Hopkins Hospital staff, has enlisted in the Army Dietitian Corps and will report for duty at Moore General Hospital, Swannonoa, North Carolina.

Olive Young Brown (Mrs. Thomas) has accepted an appointment to Johns Hopkins Hospital; Linnea Anderson, to the staff of the MacLean Psychiatric Hospital; and Josephine Adams, formerly of West Baltimore General Hospital, has taken a position in Washington, D. C.

Recent marriages include that of Jane McKee to Dr. Kyle Mundy; and Arlene Wolfgang to Mr. James Isaacs, U.S.N. Dr. and Mrs. George W. Corner, Jr., announce the birth of a son.

Massachusetts Dietetic Association. At the April 6 meeting, Cowie Hall, Harvard School of Business Administration, a panel discussion on "The Effect of Wartime Restrictions on Food Service Problems" was led by Mr. J. Leslie Rollins, in which the following discussed specific phases of the subject: Lt. Col. George F. Connor, Lt. Comdr. F. W. Hesser, Dr. Ross A. McFarland, Mr. John B. Fox, Mr. T. F. Bradshaw, Mrs. Quindara Oliver Dodge, and Opal Bowers. "Harvard at War," a movie showing the war activity at the University, followed the panel discussion.

Oklahoma Dietetic Association. At the annual meeting, April 17, Biltmore Hotel, Oklahoma City, Margaret Durrett, president, gave the welcoming address. Other speakers included: Frances MacKinnon, President, American Dietetic Association, "The Dietitian in Emergency Feeding"; Dr. Williamina Armstrong, Oklahoma A. & M. College, who presided at a round-table discussion on "Postwar Planning and the Effect of Present Rationing on the Nutritional Status of People"; and Ruth McCammon, regional nutritionist, ODHWS, "The Dietitian in the War Program." Miss MacKinnon was guest speaker at the banquet.

Texas Dietetic Association. The ninth annual meeting, titled a "War Conference," was held at the Baker Hotel, Dallas, March 19–20. Officers of the association presiding at the various sessions included Rose Richter, Olive Black, Laura McLaughlin, Rosa Spearman, Hannah Murphy, and Mary B. Clarke. The Address of Welcome was given by Miss Black, president, Dallas Dietetic Association, and the response by Miss Spearman, president of the state association. Subjects of current interest which were presented included: "Public Health Nutrition, a New Field," Mabel Perry Polan, Texas State Board of Health; "Nutrition Goes to War," Lieut. Eliot F. Beach, Food and Nutrition Office, Camp Bowz, Texas; "Wartime Program of the Extension Service," Mildred Horton, State Home Demonstration Agent, College Station; "Minerals in Nutrition," Dr. J. E. Robertson, Dallas; "Hospital Nutrition Aides," Ellen M. Koogle, American Red Cross; "Insects Affecting Human Foods," Dr. W. Laake, United States Bureau of Entomology and Plant Quarantine; "Behind the Scenes," Beula Becker Marble, past-president, American Dietetic Association; "Dehydration of Food," Clifford W. Patton, OPA; and "Substitutions, Extenders, Deceivers," Jennie S. Wilmot, University of Texas. A luncheon during the conference honored members of the Texas Dietetic Association in Army service.

Ensign Tony Bracher, formerly director, Houston Country Club, and member of the Houston Dietetic Association, having received her commission in the WAVES, is now stationed in New Orleans. Ruth Cooper, formerly of Parkland Hospital, Dallas, is in Africa with the 38th General Hospital.

The Dallas Dietetic Association has 87 members this year, 13 of whom are from Texas State College for Women and North Texas State Teachers College in Denton, while 5 are students at Texas State College for Women. Speakers and their subjects at recent meetings include: Dr. Ercel S. Eppright, "Vitamins"; Carlton Lawler, "Record Keeping"; Mrs. C. W. Brooks, "Experiences in Maui"; Dr. Florence Scoular, "Recent Research." The local association prepares the information for the nutrition bulletin distributed by the block workers of OCD. A committee also sees that every school child in Dallas receives one of the bulletins.

New members include: Mrs. M. L. Blackbird, chairman, Dallas City-County Nutrition Committee; Mrs. Ellen Koogle, nutritionist, Taystee Baking Company; Mrs. Mary Raymond Mosely, dietitian, Dallas National Defense School; Margaret Murphy Shields and Sarah Stiles, St. Paul's Hospital; Grace I. Neely, regional nutritionist, Agricultural Marketing Administration; Vivian Winston, assistant home demonstration agent; Geraldine Wilson, dietitian, Adamson High School; Mary Burk Yeager and Beatrice Heatly, assistant dietitians, Southern Methodist University.

Ethel Kendall, St. Elizabeth's Hospital, Baker, Oregon, is now at Parkland Hospital. Madalyn Bachman is at All Saints Hospital, Ft. Worth.

A canteen course under the direction of Dr. Grace Augustine, Nell Morris and Mrs. Charlotte K. Clarke, Texas State College for Women, was recently given in Dallas for home economics teachers, social workers, and camp directors. The course covered discussions on phases of institution management concerned with emergency feeding or as a background for teaching the newer methods, practical application of the aforementioned, and discussions of particular problems. One evening was devoted to the subject of infant feeding during emergencies, and another to the organization and operation of the Dallas Canteen Stationary Unit.

Speakers at meetings of the Lubbock Dietetic Association have included the following: Captain French, Lubbock Army Flying School, "Hospital Procedures at Lubbock Army Flying School with Special Reference to the Control of Venereal Diseases"; Dr. Otis Taylor, "Diet Therapy with Special Reference to Colds, Flu, and Vitamin Deficiency Diseases."

At the request of local OPA officials, the members of the Department of Foods and Nutrition, Texas Technological College, assisted institutional users with their food rationing registration March 1–10. Through talks and individual counseling, managers of restaurants and boarding-houses were given assistance in using the point system to the best advantage. Approximately 165 newspapers receive each week through the College Publicity Service a story from the Home Economics Division concerning some phase of rationing. The purpose of the articles is to help the public understand how it may be adequately fed.

Margaret W. Weeks, dean, Division of Home Economics, Texas Technological College, has been appointed chairman of the Lubbock County-City Nutrition Committee of the OPA which serves as a clearing-house for nutrition information, interprets food rationing to the public, and coordinates the efforts of all related agencies. During the week of March 1, members of the committee arranged for representatives from their respective groups to serve in information booths in each of the grocery stores during the peak shopping periods. Senior and junior home economics students of the college assisted by preparing a series of educational posters for each store, emphasizing the use of unrationed foods and showing how to use the point system to the best advantage. The next project of this committee is to stimulate interest in the planting of Victory Gardens.

Winnie Temple, dietitian, Lubbock General Hospital, resigned April 1 to enter the Army service as a dietitian.

BUY WAR BONDS AND STAMPS

The General reviews his troops

There are no bands, no bunting. His field uniform is faded from work and weather. His ambling army is all out of step. . . . *But this veteran dairy farmer ranks high in America's military strategy!*

Men must eat before they can fight. Nations must have food with their freedom. And nature's best balanced food is *milk.*

America's dairy farmers made a magnificent contribution toward victory last year—nearly 120 *billion* pounds of milk—*a world's record production.* They did it in spite of labor and machinery shortages. They did it by working longer and harder—to help keep American workers and fighters *fit.*

The country can be proud of its farmers—for pitching in and producing bumper crops of corn, wheat, meat and other foods, too.

All food is *life* in a life-and-death struggle. Save food and you save lives. Save food and you help heroic farmers feed a hungry world.

We're sure that every American will cooperate in the nation's food conservation program. We're glad that our work at National Dairy can make an important contribution to this program, too.

Our laboratories will continue their far-reaching research—developing, from milk, new weapons for war and new products for peace.

Dedicated to the wider use and better understanding of dairy products as human food . . . as a base for the development of new products and materials . . . as a source of health and enduring progress on the farms and in the towns and cities of America.

NATIONAL DAIRY
PRODUCTS CORPORATION
AND AFFILIATED COMPANIES

Originators of the Sealtest System of Laboratory Protection

Miss Temple graduated from Grasslands Hospital, Valhalla, New York, in 1941.

Sister Clement, dietitian, St. Mary of the Plains Hospital, assisted in the reorganization of the Dietary Department, St. Luke's Hospital, Pasadena, California.

Mrs. Pinkie Lou Blair, who has served for the past ten months as dietitian at the Base Hospital, Lubbock Army Flying School, will continue under civil service status and not accept the commission recently tendered, as she prefers to remain with her family in Lubbock rather than enlist for the duration.

Mary Alice Crossen, home service director, West Texas Gas Company, is serving as nutrition chairman, Lubbock County Red Cross. Under Miss Crossen's direction, about twenty-five Red Cross nutrition courses and five canteen courses have been given. All members of the local branch of the American Dietetic Association have taught one or more of these courses. Miss Crossen, in her home service capacity, serves 44 towns in West Texas. During the winter she has stressed in her publications cooking for the conserving of food values, recipes for the use of "waste fat," recipes without sugar, and points on the care of equipment. A special contribution of her department is a recipe card service index through which 10,000 cards are distributed monthly.

Utah Dietetic Association. Margaret Doidge has announced her marriage to Mr. Goldburn L. Knudsen, now in the Army Air Force.

Mr. and Mrs. H. M. Stewart (Elaine Frogner) have announced the birth of a daughter.

Recent appointments include the following: Ruth Buckholtz, Margaret Doidge Knudsen and Virginia Hougaard to Latter-Day Saints Hospital; Ruth Clayton Kearnes to Fort Douglas, Utah; and Margaret R. Rosenmeier to Salt Lake City Veterans Facility.

Wisconsin Dietetic Association. At the March meeting of the Milwaukee Dietetic Association, Dr. Eugenia Cameron, state child psychiatrist, was guest speaker. This group presented a nutrition display at the convention of the Wisconsin Dental Association, Milwaukee, March 22–24.

Hedwig Poehler showed the movie "Hidden Hunger" to a group of public health nurses at Keenan Health Center, March 25.

An emergency mass feeding program for the volunteer group from the disaster feeding centers was held at the Milwaukee Gas and Light Company, March 17. The 5-hour course, sponsored by the Milwaukee County Council of Defense, of which Ethel Keating is Nutrition Committee chairman, included menus and quantities of food required in event of disaster.

Recent appointments include: Clara Soehnelin, to State Sanatorium; Mitzie Novak, graduate of St. Mary's Hospital Training Course, to Milwaukee County Hospital; and Nellie McCannon, graduate of Iowa State College, as home agent, Milwaukee County Hospital.

News From Our Advertisers and Exhibitors. The *Borden Company* in its 85th annual report includes a considerable amount of factual information. Sales of ice cream and cheese for 1942, it is stated, reached a new high. Demands for the former were particularly heavy in the armed forces, showing a per man consumption considerably greater than per capita civilian consumption. To save gasoline and rubber, hundreds of milk routes are now supplied by horse-drawn vehicles. The company has greatly increased its production of dehydrated foods which now include dried milk, eggs, cream soups and coffee extract. It is interesting to note the following ratios: 1 lb. powdered whole milk is equal to 4 qt. whole milk; 1 lb. egg powder, to 35 eggs; ½ lb. lemon powder, to 18 lemons; and ½ lb. dried coffee extract, to 2¾ lb. roasted coffee beans.

In connection with the short release concerning restricted and special diets and food rationing from the office of Dr. Russell M. Wilder, Chief, Civilian Food Requirements Branch, FDA, which appears under the "Nutrition and the War" section of this JOURNAL, attention is called to a Rationing Supplement to "Cellu Topics" published by the *Chicago Dietetic Supply House, Inc.*, which gives full details concerning this problem, including point values of the several canned products used in these diets.

Mary Hale Martin, in "Kitchen Chatter," the monthly bulletin of *Libby, McNeill & Libby, Chicago*, includes a table of common container sizes and weights and point values for Libby's canned and bottled food products.

WPB Order Affecting Commercial Food Service Equipment

Pursuant to the article on "Emergency Food Service Equipment" by Anna Janzen in this JOURNAL for February, Mr. J. T. Heilig of the Cleveland Range Company and a member of the Advisory Committee, Commercial Cooking Equipment Industry Section, Plumbing and Heating Branch, WPB, writes as follows: "The status of affairs outlined by Miss Janzen was reaching a climax just about the time her article was being written and on October 1 the manufacturers of commercial cooking and food and plate warming equipment were recognized as a separate industry by the establishment of the Commercial Cooking Equipment Industry Section of the Plumbing and Heating Branch, WPB. At that time Limitation Order L-182 was issued. . . . It is administered by persons who are efficient and practical and the products of our manufacturers are now available to those hospitals, institutions, schools, colleges, hotels and restaurants which are contributing to civilian welfare or to the war effort."

Mr. Heilig included in his letter a copy of Order L-182 which restricts the manufacturers of commercial cooking and food and plate warming equipment from "putting into process in the manufacture of such equipment, including finished units and parts thereof, during any calendar quarter, any iron and steel in excess of 6.25 per cent of the iron and steel put into process in the manufacture of finished units of such equipment by them during the calendar year 1941" with the exception of equipment for the Army, Navy, Maritime Commission, the War Shipping Administration or the Defense Plant Corporation. No iron or steel is allowed, except for repair parts, for the manufacture of barbecue machines, chicken singers, dish warmers, chop suey ranges, cruller and potato chip fryers, egg boilers, nut blancher ovens, nut fryers, nut roasters, oyster stoves, rotisseries, sausage warmers and waffle irons. Delivery of repair parts by manufacturers is not affected by the order.

The order provides for appeal by persons affected, which can be made to the WPB. The form to be filled out for this purpose (PD-638-A) requires pertinent information about the present equipment, approximate number of persons served by the establishment, etc. and provides opportunity to explain why the new equipment is necessary. All communications concerning the order should be addressed to the War Production Board, Plumbing and Heating Branch, Washington, D. C. Ref: L-182.